



REQUEST FOR TENDER

Taroom Sewage Treatment Plant – Civil Works

CONTRACT NO: T2425.13

Request for Tender



PART 1 – PREAMBLE				
Banana Shire Council invites tender from suitably qualified tenderers for Taroom Sewage Treatment Plant civil works as described in detail in Part-5 Scope. All WUC are to be completed by 30 April 2025.				
PART 2 – GENERAL INFORMATION				
1. Contract details:	T2425.13 Taroom Sewage Treatment Plant – Civil Works			
2. Communications by Tenderers:	Communications regarding the Procurement Process must be submitted to enquiries@banana.qld.gov.au no later than five (5) calendar days prior to the time stated in Item 4			
3. Briefing or site inspection:	Details	Maximum attendees	Mandatory	RSVP
	Tender Briefing, to be held on the 29 th of October 2024 at 9.00 am 62 Valentines Plains Road, Biloela Qld 4715 – A team's link will be made available for those who cannot attend in person.	N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	RSVP to enquiries@banana.qld.gov.au by the 28 th of October 2024 at 11:00am
4. Submission of Tender:	Tenders must be submitted electronically only at tenders@banana.qld.gov.au or VendorPanel by no later than 11:00am on 20 th of November 2024. <i>Note// Adequate time must be allowed for the Tender and all supporting documents to be uploaded or received by this time.</i>			
5. Evaluation Criteria:	Evaluation Criteria			Weighting (%) (Optional)
	Price			35%
	Ability to complete project within the required timeframe			20%
	Previous Experience			25%
	Quality, Environmental, Safety and Other Management Processes			15%
	Local Content			5%
6. Tenders should not be longer than:	N/A			
7. Tenders to be valid for:	90 calendar days after the time stated in Item 4 (as extended if at all, pursuant to the Procurement Process Conditions)			
8. Complaints:	Complaints regarding Procurement Process to be directed to: enquiries@banana.qld.gov.au			
PART 3 – PROCUREMENT PROCESS CONDITIONS				
The Procurement Process is governed by, and this Request for Tender is to be read in conjunction with, the Procurement Process Conditions attached to or provided with this Request for Tender and identified as T2425.13 Taroom Sewage Treatment Plant – Civil Works – Procurement Process Condition .				
PART 4 – CONTRACT				
The contract shall be made in accordance with the terms and conditions of the Standard Australia contract format and identified as T2425.13 Taroom Sewage Treatment Plant—Civil Works—Contract . Once the tender is awarded, the final contract documents will be forwarded. A copy of the contract document is also available by request.				

PART 5 – SCOPE

The Scope is described in the document(s) attached to or provided with this Request for Tender and identified as **T2425.13 Taroom Sewage Treatment Plant—Civil Works – Scope.**

- **T2425.13 Taroom Sewage Treatment Plant - Civil Works - Pricing Schedule**
- **T2425.13 Taroom Sewage Treatment Plant - Civil Works - Taroom STP Works Specification**
- **T2425.13 Taroom Sewage Treatment Plant - Civil Works - Technical Specification – Earthworks**
- **T2425.13 Taroom Sewage Treatment Plant - Civil Works -Technical Specification – Demolition**
- **T2425.13 Taroom Sewage Treatment Plant - Civil Works - Concrete Works Specification**
- **TARSTP-DWG-CIV-0002_2**
- **TARSTP-DWG-CIV-0003_2**
- **TARSTP-DWG-CIV-0014_1**
- **TARSTP-DWG-STR-0010_0**
- **TARSTP-DWG-STR-0011_0**
- **TARSTP-DWG-STR-1001_0**
- **TARSTP-DWG-STR-1012_0**
- **TARSTP-DWG-STR-1015_0**
- **TARSTP-DWG-STR-1028_2**
- **T2425.13 Taroom Sewage Treatment Plant—Civil Works - General Specification**

PART 6 – RESPONSE SCHEDULES

The Tender must be submitted in the form provided in the response schedules attached to or provided with this Request for Tender and identified as **T2425.13 Taroom Sewage Treatment Plant—Civil Works - Response Schedule.**



Procurement Process Conditions

Taroom Sewage Treatment Plant – Civil Works
CONTRACT NO: T2425.13

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Procurement Process Conditions

1. GENERAL

- 1.1 **(Conduct of the Procurement Process)** The Principal will endeavour to conduct the Procurement Process in a manner which is consistent with these Procurement Process Conditions.
- 1.2 **(Rights of the Principal)** The Principal may do anything which it considers to be prudent or necessary for the proper conduct of the Procurement Process, including:
- (a) **(alteration of Procurement Documents)** amend, add to or delete any part of the Procurement Documents including:
 - (i) the procedures and timeframes provided in the Procurement Process Conditions;
 - (ii) the Evaluation Criteria (including weightings);
 - (iii) the Scope; and
 - (iv) where one is included in the Procurement Documents, the Contract;
 - (b) **(suspension or termination)** suspend or terminate the Procurement Process;
 - (c) **(attendances)** request any one or more Respondents to attend a briefing, site inspection or other meeting or to make a presentation of their Response in person at the Principal's office at no cost to the Principal;
 - (d) **(change or error in Procurement Documents)** request any one or more Respondents to change their Response to take account of a change in the Procurement Documents or any error in such documents;
 - (e) **(clarification or alteration)** request any one or more Respondents to clarify or alter any aspect of the Respondent's Response;
 - (f) **(additional information)** request additional information from one or more Respondents relating to a Response, the Procurement Process, the Respondent's compliance with the Procurement Process Conditions or any other matter which the Principal considers relevant to its assessment (including information that should have been, but was not, included in the Respondent's Response);
 - (g) **(negotiation)** negotiate amendments to any aspect of a Response with any one or more Respondents and suspend or terminate such negotiations at any time;
 - (h) **(revised Responses)** invite one or more Respondents to provide a revised Response or best and final offer; and/or
 - (i) **(shortlisting)** create a shortlist of one or more Respondents and exercise any of its rights only in respect of one or more of the shortlisted Respondents.
- 1.3 **(Conduct of Respondents)** The Respondent must not, and must ensure that its Personnel do not, engage in any Improper Conduct. The Respondent must immediately notify the Principal in the event that it becomes aware that it, or any of its Personnel, have engaged in Improper Conduct. Where appropriate, the Principal may report Improper Conduct by the Respondent to the appropriate Authority and provide that Authority with any relevant information related to that conduct.
- 1.4 **(Complaints in relation to the Procurement Process)** The Respondent must make any complaint in relation to the Procurement Process using the Communication Method immediately upon the cause of the complaint arising or upon the Respondent becoming aware of the cause. The complaint must be made in writing to the Complaints Manager and must contain adequate detail to allow the Complaints Manager to properly investigate the complaint.

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- 1.5 **(No warranty)** The Principal gives no warranty and makes no representation that the Procurement Documents or any other information provided to the Respondent in connection with the Procurement Process is accurate, adequate or complete.
- 1.6 **(No liability)** Neither the Principal nor its Personnel shall be liable upon any Claim for any Specified Loss in connection with the Procurement Process.

2. BRIEFINGS AND SITE INSPECTIONS (RFT AND RFEOI ONLY)

- 2.1 **(Attendance)** The Respondent must attend any briefing or a site inspection which is identified in the General Information as mandatory. Respondents are encouraged to attend any briefing or site inspection which is not described as mandatory.
- 2.2 **(RSVP)** The Respondent must confirm that it intends to attend the briefing or site inspection to the email address and by the time and date stated in the General Information and may only bring a maximum of the number of Personnel stated in the General Information.
- 2.3 **(Safety)** The Respondent must inform itself of risks to health and safety arising from attendance at the briefing or site inspection and take all reasonable steps to ensure that such risks are eliminated or, if it is not possible to eliminate them, to minimise them so far as is practicable.
- 2.4 **(Obligation to inspect)** Where no site inspection is identified in the General Information, the Respondent must make its own arrangements to inspect the site prior to lodging its Response.

3. COMMUNICATIONS DURING PROCUREMENT PROCESS

- 3.1 **(Communication Method)** All communications by the Principal to the Respondent shall at first instance be made using the Communication Method. Except where expressly permitted by these Procurement Process Conditions, all communications by the Respondent to the Principal in connection with the Procurement Process shall at first instance be directed to the Principal using the Communication Method. No other communication method may be utilised by the Respondent unless expressly permitted by the Principal or where technical difficulties prevent the Respondent from utilising the Communication Method or the Principal expressly agrees to an alternative method.
- 3.2 **(Respondent's responsibility)** The Respondent must ensure that it is capable of receiving and does receive all communications to the Respondent in connection with the Procurement Process. Where the Communication Method is email, it is the Respondent's responsibility to ensure that it notifies the Principal of the correct email address for receiving communications. Where the Communication Method is through a website, the Respondent must ensure that it is properly registered with and capable of receiving communications through the website.
- 3.3 **(Confidentiality of communications)** The Principal may notify any or all Respondents of a request for further information made by a Respondent and the Principal's response to it without identifying the submitting Respondent or may keep a request for information confidential and respond only to the Respondent if it considers that it is appropriate to do so.
- 3.4 **(No reliance)** The Respondent must not rely upon any information (including information provided at a briefing or site inspection) unless it is confirmed by the Principal through the Communication Method.
- 3.5 **(Communication Closing Time)** The Principal will not respond to any request for information received after the Communication Closing Time.

4. THE RESPONSE (RFT AND RFQ ONLY)

- 4.1 **(Application of clause)** This clause 4 only applies in respect of an RFT or an RFQ.
- 4.2 **(Acceptance of Contract and Scope)** If one has not been provided, the Respondent must obtain a copy of the Contract from the Principal by requesting a copy through the Communication Method. Except to the extent that the Respondent has detailed a proposed

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alternative, amendment, qualification or departure in a Response, the Respondent will be taken to have unconditionally accepted and agreed to:

- (a) be bound by the terms and conditions of the Contract; and
- (b) carry out and complete the whole of the obligations described in or to be reasonably inferred from the Procurement Documents.

4.3 **(Price)** The Price must be submitted exclusive of GST and in Australian dollars.

4.4 **(Discrepancy in Price)** Where the Response Form requires the Respondent to provide a Price and there is a discrepancy between the amount stated in the Response Form as the Respondent's Price and the sum total of the items in any Price Schedule then:

- (a) if the Contract provides that it is a lump sum contract, then the sum total of the items in the Price Schedule shall be the Respondent's Price; or
- (b) if the Contract provides that it is a schedule of rates contract or a part lump sum and part schedule of rates contract, then the rate, price or lump sum of each item will prevail over the total shown, and the total shall be adjusted accordingly.

4.5 **(Response Validity Period)** The Respondent's Response will remain valid and open for acceptance by the Principal until the end of the Response Validity Period and thereafter until it is withdrawn in writing by the Respondent or the Procurement Process is finalised. The Principal may consent to the Respondent withdrawing its Response before the end of the Response Validity Period. The Principal may request an extension of the Response Validity Period at any time by giving written notice to the Respondent. If the Respondent does not agree to the requested extension then the Principal may exclude the Respondent's Response from assessment or further assessment as the case may be.

4.6 **(Alternative Responses)** If the Respondent wishes to submit an Alternative Response, then the Respondent is encouraged to:

- (a) also submit a Conforming Response; and
- (b) submit the Alternative Response on a separate Response Form to the Conforming Response, clearly marked, "ALTERNATIVE RESPONSE" accompanied by a clear summary of all points of difference between the Alternative Response and the Conforming Response.

5. RESPONDENT'S GENERAL WARRANTIES AND REPRESENTATIONS

5.1 **(Warranties and Representations)** By lodging a Response, the Respondent warrants and represents that:

- (a) **(conduct of Respondent)** neither the Respondent nor any of its employees or agents has engaged in any Improper Conduct;
- (b) **(authority)** the Response has been signed and lodged by a person with authority to do so on behalf of the Respondent;
- (c) **(basis of Response)** the Respondent:
 - (i) has received or obtained copies of all of the Procurement Documents and all information or documents referred to in the Procurement Documents; and
 - (ii) has not relied on the accuracy, adequacy or completeness of any documents or information provided or any representation made by or on behalf of the Principal in connection with the Procurement Process in preparing its Response;

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- (d) **(accuracy of Response)** all information provided in or with the Response is accurate;
- (e) **(ability)** the Respondent and its relevant Personnel:
 - (i) hold (and are compliant with all requirements of) all necessary competencies, licences (including if necessary, a licence under the *Queensland Building and Construction Commission Act 1991* (Qld)), accreditations, certifications, permits, clearances and other authorisations which will be required for the Respondent to carry out the Scope if it is ultimately engaged to carry out that Scope; and
 - (ii) are not excluded from submitting a tender under any applicable Queensland or Federal Government scheme, code or policy;
- (f) **(suitability etc. of works, goods or services)** where the Principal has stated in the Procurement Documents the purpose(s) for which the works, goods or services must be suitable, appropriate, adequate or fit, the works, goods or services shall be suitable, appropriate, adequate and fit for those purposes (but this warranty and representation will not apply to the extent (if any) that the Respondent has expressly excluded or limited it in the Respondent's Response);
- (g) **(Effect of implied warranties)** neither clause 5 nor clause 6 shall operate in any way to limit, exclude or otherwise restrict the operation of any warranty implied by law.

6. RESPONDENT'S FURTHER WARRANTIES AND REPRESENTATIONS (RFT AND RFQ ONLY)

- 6.1 **(Application of clause)** This clause 6 only applies in respect of an RFT or an RFQ.
- 6.2 **(Warranties and Representations)** By lodging a Response, the Respondent warrants and represents that:
 - (a) **(investigations)** the Respondent has undertaken its own enquiries and investigations to satisfy itself of:
 - (i) the nature and extent of the Scope, its contractual obligations and all other risks, contingencies and other circumstances which could have an impact on its ability to carry out and complete the obligations it will have under the Contract if its Response is accepted for the Price; and
 - (ii) the suitability, appropriateness and adequacy of the Scope (including, in respect of contracts under which the successful Respondent is required to design works, any preliminary design included in the Scope) for the purposes stated in or to be reasonably inferred from the Scope;
 - (b) **(ability)** the Respondent and its relevant Personnel:
 - (i) have and will maintain the necessary experience, expertise and skill to perform its obligations under the Contract in accordance with the requirements of the Contract in the event that its Response is accepted; and
 - (ii) have and will maintain the resources necessary to comply with the timeframes for the performance of the Contract stated in the Procurement Documents (as amended if at all, pursuant to these Procurement Process Conditions);
 - (c) **(price)** the Price, and all rates, sums and prices included in the Response allow for:
 - (i) all of the risks, contingencies and other circumstances which could have an effect on the Respondent's ability to carry out and complete the obligations it will have under the Contract if its Response is accepted for the Price, except to the extent that the Contract expressly allows an adjustment;

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- (ii) the provision of all materials, plant, labour and other services necessary for the proper completion of the obligations it will have under the Contract if its Response is accepted, whether or not those items are expressly mentioned in the Contract; and
- (iii) unless the Contract expressly allows an adjustment, rise and fall in costs;
- (d) **(competitive neutrality)** if the Respondent is required by law to comply with principles of competitive neutrality, the Respondent has properly considered, assessed and complied with the applicable competitive neutrality principles in relation to the Procurement Process and the acceptance by the Principal of the Respondent's Response will not breach those principles;
- (e) **(notice)** the Respondent has notified the Principal in its Response of any:
 - (i) ambiguity, inconsistency, uncertainty, error or omission which it has discovered in or from the Procurement Documents;
 - (ii) any assumptions that it has made in determining its Price;
 - (iii) further information or investigations which it considers that it requires to enable it to give the warranties and make the representations in this clause 6,

and otherwise gives all warranties and makes all representations which the Contract requires to be given or made by the successful Respondent. The Respondent acknowledges that the Principal will rely on these warranties and representations in entering into a contract with the successful Respondent.

7. LODGEMENT AND OPENING OF RESPONSES

7.1 **(Method of lodgement)** A Response must be lodged:

- (a) if the Tender Box is a website, by uploading it to the Tender Box;
- (b) if the Tender Box is an email address, by sending it as an attachment to an email to the Tender Box; or
- (c) if the Tender Box is a physical address, by delivering it to the Tender Box.

The Principal may direct or allow the Response to be lodged by an alternative method.

7.2 **(Time of lodgement)** A document forming part of a Response shall be deemed to have been lodged:

- (a) where the Tender Box is a website, at the time that the document is successfully uploaded to the Tender Box, as indicated on the electronic receipt issued to the Respondent;
- (b) where the Tender Box is an email address, at the time that an email attaching the document is successfully delivered to the Tender Box, as indicated on the email system on which the Tender Box is hosted;
- (c) where the Tender Box is a physical address, at the time that the document is physically received at the Tender Box; or
- (d) where the Response is lodged by an alternative method allowed by the Principal, when it is received by the Principal by that method.

7.3 **(Response opening)** Responses will not be opened publicly and the Respondent will not be permitted to attend the opening of Responses.

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8. ASSESSMENT OF RESPONSES

- 8.1 **(Evaluation Criteria)** In determining which Response(s) are most advantageous to the Principal, each Response evaluated in accordance with these Procurement Process Conditions will be assessed, but not necessarily exclusively, against the Evaluation Criteria (if any).
- 8.2 **(Considerations)** In assessing Responses, the Principal may consider any information which the Principal reasonably considers to be relevant to its assessment (however obtained), including:
- (a) information contained in the Response or any amendment to or clarification of a Response;
 - (b) information provided at a meeting with or presentation by the Respondent;
 - (c) outcomes from discussions with a Respondent's referees (if any);
 - (d) information obtained pursuant to clause 8.5;
 - (e) the Respondent's past performance under other contracts with the Principal or third parties; and
 - (f) the reasonably held subjective opinions of the persons appointed by the Principal to evaluate Responses or any advisor to such persons.
- 8.3 **(Uncertainties)** The Principal may ignore any part of a Response which is ambiguous, uncertain, unclear or illegible without seeking clarification from the Respondent and may assess the balance of the Response.
- 8.4 **(Right to exclude)** The Principal may, but shall not be obliged to, reject or exclude from assessment any Response including:
- (a) a Non-Conforming Response, an Alternative Response or a Late Response;
 - (b) a Response, in respect of which the Principal reasonably believes that the Respondent has:
 - (i) failed to comply with these Procurement Process Conditions or any request made by or on behalf of the Principal pursuant to them within the time required; or
 - (ii) breached a warranty given or representation made pursuant to these Procurement Process Conditions or that a warranty, declaration or representation in the Respondent's Response is false or misleading in any material respect;
 - (c) a Response in respect of which the Principal reasonably believes that the Respondent cannot reasonably comply with the obligations which it will have under the Contract (in the event that its Response is successful) for the Price; or
 - (d) a Response which fails to achieve a satisfactory score against any of the Evaluation Criteria, even if the overall score of the Response is satisfactory;
- 8.5 **(Other information or assistance)** The Principal may undertake its own investigations, or engage third parties to do so on its behalf, in relation to any aspect of a Response (including verifying any warranty, representation or declaration made or given in the Response or pursuant to these Procurement Process Conditions) or any other matter which it considers relevant to the conduct of the Procurement Process. The Respondent must cooperate with such investigations and provide all information and assistance reasonably requested by or on behalf of the Principal in connection with the investigation.

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9. SHORTLISTING (RFEOI ONLY)

- 9.1 **(Application of clause)** This clause 9 only applies in respect of an RFEOI.
- 9.2 **(Shortlisting)** The Principal intends, but is not bound, to create a shortlist of Respondents and invite tenders from the shortlisted Respondents.
- 9.3 **(No obligation)** The Principal is not bound to shortlist or invite a tender from any Respondent, including the Respondents with the highest scores against the Evaluation Criteria. The Principal may shortlist and invite tenders from as many or as few Respondents as the Principal sees fit and may choose not to shortlist any Responses or invite any tenders.
- 9.4 **(Local preference)** The Principal may shortlist an EOI that is from a Local Supplier in preference to comparable EOIs from Non-Local Suppliers even if the EOIs from the Non-Local Suppliers have been assessed as more favourable in terms of one or more Evaluation Criteria.
- 9.5 **(RFT)** A Respondent shall not be entitled to submit a tender unless and until the Principal expressly invites the Respondent to submit a tender in writing.
- 9.6 **(Unsuccessful Respondents)** Unsuccessful Respondents will be notified after the Procurement Process is concluded. The Principal may provide feedback to unsuccessful Respondents if requested to do so, but such feedback may be general in nature, will be limited to the Respondent's EOI only and may be postponed until after any related Request for Tender process is finalised.

10. ACCEPTANCE (RFT AND RFQ ONLY)

- 10.1 **(Application of clause)** This clause 10 only applies in respect of an RFT or an RFQ.
- 10.2 **(Ability to accept)** The Principal is not bound to accept the Response with the lowest Price or the Response with the highest score against the Evaluation Criteria, or any Response. The Principal will, if it accepts a Response, accept the Response(s) which it reasonably believes are the most advantageous to it having regard to the Sound Contracting Principles and the requirements of the *Local Government Regulation 2012* (Qld) to the extent that they are applicable and relevant to the Procurement Process.
- 10.3 **(Local preference)** The Principal may accept a Response lodged by a Local Supplier in preference to comparable Responses from Non-Local Suppliers even if the Responses from the Non-Local Suppliers have been assessed as more favourable in terms of one or more Evaluation Criteria, so long as the overall differences are not substantial, and so long as it is clear that the Local Supplier can meet the Principal's requirements at an acceptable standard which is generally comparable to that of the Non-Local Suppliers.
- 10.4 **(Acceptance of more than one Response and acceptance of part of a Response)** The Principal may accept a Response in whole or in part. Without limiting this, where the Scope comprises distinct portions of works, goods or services, the Principal may accept a Response from one or more Respondents in relation to different portions of the works, goods or services as if those portions had been the subject of separate Procurement Processes.
- 10.5 **(No contract or appointment until formal acceptance)** Unless and until the Principal expressly notifies the Respondent in writing that the Respondent's Response (as amended by any post-Response negotiation, if any) has been successful or the parties execute a contract:
- (a) no binding contract for the provision of any work, services and/or goods by the Respondent will exist between the parties; and
 - (b) in respect of an RFT for appointment as a Pre-qualified Supplier or Preferred Supplier, the Respondent will not be considered to be appointed as a Pre-qualified Supplier or Preferred Supplier.

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For clarity, a statement published by the Principal but not specifically notified to the Respondent (including a record of a council resolution) to the effect that a Response has been accepted or a contract has been awarded does not, of itself, constitute an acceptance of the Response or notice that the Response has been successful or constitute a rejection of any other Response.

- 10.6 **(Form of Contract)** Unless the RFT or RFQ stated that the Respondent would not be required to enter into a contract until it is separately engaged by the Principal to provide works, goods or services, if a Response is accepted, the successful Respondent will be required to enter into a contract in the form of the Contract, as amended by agreement between the parties.
- 10.7 **(Unsuccessful Respondents)** Unsuccessful Respondents will be notified after a Response has been accepted. The Principal may, at its discretion, notify unsuccessful Respondents of the name of, and Price submitted by, the successful Respondent. The Principal may provide feedback to unsuccessful Respondents if requested to do so, but such feedback may be general in nature and will be limited to the Respondent's Response only.
- 10.8 **(Arrangement with other local governments)** The Respondent acknowledges that if, pursuant to the Procurement Process, the Respondent is selected to be a Preferred Supplier or Pre-qualified Supplier for goods and/or services then any Related Local Government may make a contract with the Respondent for the supply of those goods and/or services, as if that Related Local Government had itself selected the Respondent to be a Preferred Supplier or Pre-qualified Supplier of those goods and/or services.

11. DOCUMENTS AND INFORMATION

- 11.1 **(Ownership)** The Procurement Documents remain the property of the Principal. The Response will become the property of the Principal upon lodgement.
- 11.2 **(Intellectual Property Rights)** Intellectual Property Rights in documents and information provided on behalf of a party in connection with the Procurement Process remain, as between the parties, with the party on whose behalf they were provided. The Principal and the Respondent grant each other a perpetual, non-exclusive, royalty free licence to do the things contemplated by clause 11.9. The licence so granted by the Respondent is irrevocable. The licence granted by the Principal may be revoked at any time on the giving of written notice.
- 11.3 **(Warranty and representation)** The Respondent warrants and represents that:
- (a) it owns or has a right to use the Intellectual Property Rights in its Response for the purpose of lodging a Response and undertaking the obligations which it will have under a contract with the Principal in the event that the Respondent's Response is accepted; and
 - (b) it has the right and authority to grant the licence in clause 11.2 and the Principal's exercise of the rights so granted will not infringe the Intellectual Property Rights of a third party.
- 11.4 **(Confidentiality)** Except to the extent otherwise provided in these Procurement Process Conditions, each party shall keep Confidential Information of the other party confidential. The Respondent must inform each of its Personnel and any other person to whom Confidential Information of the Principal is disclosed of the Respondent's obligations under this clause 11.4. Subject to clause 11.9(b), the Respondent must return any and all Confidential Information when requested to do so by the Principal.
- 11.5 **(Information Privacy Act)** If the Respondent collects or has access to 'Personal Information' as that term is defined in the *Information Privacy Act 2009* (Qld) in connection with the Procurement Process, the Respondent must comply with Parts 1 and 3 of Chapter 2 of that Act as if the Respondent was the Principal. The Principal collects and uses personal information and non-personal information in the Response so that it can properly conduct the Procurement Process and otherwise carry out its functions as a Local Government. The Principal is authorised to collect this information under the *Local Government Act 2009* (Qld) and the *Local Government Regulation 2012* (Qld) and other law. The information in the Respondent's Response will be accessible by employees of the Principal and third party personnel engaged

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to assist the Principal in conducting the Procurement Process or otherwise carrying out the functions of the Principal. Information in the Response may also be disclosed as required by the *Local Government Regulation 2012* (Qld) and the *Right to Information Act 2009* (Qld) as described below.

- 11.6 **(Local Government Regulation)** The *Local Government Regulation 2012* (Qld) provides that the Principal must, as soon as possible after entering into a contractual arrangement worth \$200,000 or more (exclusive of GST) publish relevant details of the contract (including the person with whom the Principal has entered into the contractual arrangement, the value of the contractual arrangement and the purpose of the contractual arrangement) on the Principal's website and display those details in a conspicuous place in the Principal's public office. The relevant details must be published or displayed in this manner for a period of at least 12 months.
- 11.7 The *Local Government Regulation 2012* (Qld) may also require the Principal to make documentation and information contained in, or provided by the Respondent in connection with, a Response (including documentation and information identified by the Respondent as confidential) publicly available where that documentation or information is:
- (a) discussed in a Local Government Meeting;
 - (b) included in a report or other document that:
 - (i) relates to an item on the agenda for a Local Government Meeting and is made available to Councillors or committee members for the purposes of the meeting;
 - (ii) is directly relevant to a matter considered or voted on at a Local Government Meeting; or
 - (iii) is presented at a Local Government Meeting for the consideration or information of the Local Government or committee; or
 - (c) otherwise required to be disclosed pursuant to a provision of the *Local Government Act 2009* (Qld) or the *Local Government Regulation 2012* (Qld).
- 11.8 **(Right to Information)** The *Right to Information Act 2009* (Qld) provides members of the public with a legally enforceable right to access documents held by Queensland Government agencies (including the Principal). The Act requires that documents be disclosed upon request, unless the documents are exempt or on balance, disclosure is contrary to public interest. Information or documentation contained in or provided by the Respondent in connection with a Response is potentially subject to disclosure to third parties, including documentation and information identified by the Respondent as confidential. Any application for disclosure will be assessed in accordance with the terms of the Act. Notwithstanding any other provision of the Procurement Documents or a Response, if a Response is accepted, the Principal may publish on a Queensland Government website or by any other means, contract information including:
- (a) the name and address of the Principal and the successful Respondent;
 - (b) a description of the goods and/or services to be provided or works to be carried out pursuant to the contract;
 - (c) the date of award of the contract (including the relevant stages if the contract involves more than one stage);
 - (d) the contract value (including the value for each stage if the contract involves more than one stage and advice as to whether any non-price criteria were used in the evaluation of Responses);
 - (e) the procurement method used; and
 - (f) for contracts with a value over \$10 million, the contract, or summary information in respect of the contract, between the Principal and the Respondent.
- 11.9 **(Use of documents and information)** Documents and information provided on behalf of a party to the other party in connection with the Procurement Process (including documentation and

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information identified by the Respondent as confidential) may be used, copied, modified or disclosed as required by any law and otherwise:

- (a) by the Principal, as the Principal considers to be reasonably necessary to:
 - (i) properly conduct the Procurement Process;
 - (ii) exercise the rights granted to it in these Procurement Process Conditions;
 - (iii) obtain legal, accounting or other professional advice in connection with the Response;
 - (iv) report any actual or suspected Improper Conduct to the appropriate Authority; and/or;
 - (v) to otherwise properly carry out its functions as a Local Government;
- (b) by the Respondent, as is reasonably necessary to enable the Respondent to:
 - (i) prepare the Response;
 - (ii) obtain legal, accounting or other professional advice in connection with the Response; or
 - (iii) comply with the Respondent's corporate governance requirements.

If the Respondent is required by law to disclose Confidential Information of the Principal, the Respondent must notify the Principal of this prior to making such disclosure and must only disclose the minimum amount of information required to meet its obligation to disclose.

11.10 **(Media)** The Respondent must not, either on its own account or in conjunction with other parties, issue any publication, advertisement, document, article or information whether verbal or written, in connection with the Procurement Process in any media without the prior approval of the Principal.

12. DEFINITIONS

12.1 **(Definitions)** In these Procurement Process Conditions, unless the context otherwise requires:

- (a) **Addenda and Addendum** means any communication issued to Respondents in accordance with these Procurement Process Conditions which is identified as an Addendum;
- (b) **Alternative Response** means a Response which is otherwise a Conforming Response but which in the opinion of the Principal, contains significant alternatives, qualifications or amendments to or departures from the Contract or the Scope;
- (c) **Authority** means a local government, the State of Queensland, the Commonwealth or other any Federal, State, or local government authority, administrative or judicial body or tribunal, department, commission, agency, government owned corporation, statutory body or instrumentality having jurisdiction over the project;
- (d) **Business Day** means a day that is not a Saturday, Sunday or public holiday at Banana Shire Council;
- (e) **Claim** includes any claim, action, demand, proceeding, suit, defence or set-off, however arising including at law (including a breach of an express or implied term of contract), under statute, in equity, in tort (including for negligence), in quasi-contract, for unjust enrichment and to the extent permitted by law, pursuant to any other principle of law, in connection with the Procurement Process;

Procurement Process Conditions

- (f) **Communication Closing Time** means the time identified in the General Information as the time by which communications by Respondents must be submitted;
- (g) **Communication Method** means submitting an enquiry through the website forum or sending an email to the email address nominated for communications by Respondents in the General Information;
- (h) **Complaints Manager** means the person identified in the General Information as the person to whom complaints regarding the Procurement Process should be directed;
- (i) **Confidential Information** means documents and information provided or made available by or on behalf of one party to the other party in connection with the Procurement Process which are of their nature confidential (including copies of such documents and information) but not including documents and information which are in the public domain other than through a breach of clause 11.4;
- (j) **Conforming Response** means a Response which, in the opinion of the Principal:
 - (i) is substantially in the form and contains substantially all of the documentation, information, acknowledgements, warranties, declarations and undertakings required by the Response Schedules;
 - (ii) contains no significant alternatives, qualifications or amendments to or departures from the Contract or the Scope; and
 - (iii) in respect of Tenders or EOIs only, does not substantially exceed the Maximum Page Limit (if any);
- (k) **Contract** means:
 - (i) a contract which may be entered into between the Principal and a Respondent pursuant to an RFT or RFQ and which will be in the form referenced in Part 4 – Contract of the RFT or RFQ, as amended (if at all) by the express written agreement of the Principal; and
 - (ii) where an RFT is for appointment as a Preferred Supplier or Pre-qualified Supplier, also includes a contract which may be entered into during the term of the appointment unless the context requires otherwise;
- (l) **Councillor** has the same meaning as in the *Local Government Act 2009* (Qld);
- (m) **EOI (Expression of Interest)** means a Response lodged by a Respondent in response to an RFEOI and includes all documents and information lodged with or as part of the expression of interest;
- (n) **Evaluation Criteria** means:
 - (i) for an RFT or an RFEOI, the evaluation criteria (if any) set out in the General Information; and
 - (ii) for an RFQ, the evaluation criteria (if any) set out in the RFQ;
- (o) **General Information** means Part 2 – General Information of the RFQ, RFT or RFEOI (as the case may be);
- (p) **GST** has the same meaning as in the *A New Tax System (Goods and Services Tax) Act 1999* (Cth);
- (q) **Improper Conduct** means:

Procurement Process Conditions

- (i) engaging in any activity or obtaining any interest which results in or is likely to result in any actual, potential or perceived conflict between the interests of the Respondent and the Respondent's obligations to the Principal in connection with the Procurement Process;
- (ii) engaging in misleading or deceptive conduct in connection with the Procurement Process;
- (iii) engaging in any collusive tendering, anticompetitive conduct, or any other unlawful or unethical conduct with any other Respondent, or any other person in connection with the Procurement Process;
- (iv) canvassing, attempting to improperly influence, offering any inducement to or accepting or inviting improper assistance from any Councillor or other Personnel (or former Personnel) of the Principal in connection with the Procurement Process;
- (v) using any information improperly obtained, or obtained in breach of any obligation of confidentiality in preparing the Respondent's Response;
- (vi) breaching any law in connection with the Procurement Process;
- (vii) engaging in aggressive, threatening, abusive, offensive or other inappropriate behaviour or committing a criminal offence; or
- (viii) engaging in conduct contrary to sections 199 and 200 of the *Local Government Act 2009* (Qld);
- (r) **Intellectual Property Rights** means copyright, patents and all rights in relation to inventions, registered and unregistered trademarks (including service marks), registered designs, circuit layouts and all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields;
- (s) **Late Response** means any Response that is not received in the Tender Box (or otherwise received by the Principal by an alternative method permitted under the Procurement Process Conditions) by the Response Closing Time;
- (t) **Local Government** has the same meaning as in the *Local Government Act 2009* (Qld);
- (u) **Local Government Meeting** has the same meaning as in the *Local Government Act 2009* (Qld);
- (v) **Local Supplier:**
 - (i) where the Principal's procurement policy provides a meaning of local supplier, has the meaning given in the Principal's procurement policy, a copy of which can be obtained from the Principal upon request; or
 - (ii) where the Principal does not have a procurement policy, or the procurement policy does not provide a meaning of local supplier, means a supplier that:
 - (A) is beneficially owned and operated by persons who are residents or ratepayers of the local government area of the Principal as determined under the *Local Government Regulation 2012* (Qld); or
 - (B) has its principal place of business within that local government area; or
 - (C) otherwise has a place of business within that local government area that solely or primarily employs persons who are residents or ratepayers of that local government area;

Procurement Process Conditions

- (w) **Maximum Page Limit** means the number of pages which may be lodged as, with or in relation to the Response (including, unless otherwise indicated, all attachments, annexures, supplements, parts, schedules or appendices), which the General Information states a Response should not be longer than;
- (x) **Non-Conforming Response** means a Response which is not a Conforming Response or an Alternative Response;
- (y) **Non-Local Supplier** means a supplier (including a Respondent) that is not a Local Supplier;
- (z) **Personnel** includes the officers, employees, agents, representatives, contractors and consultants of a party and any other person or entity for whom that party is vicariously liable;
- (aa) **Preamble** means Part 1 – Preamble of the RFEOI, RFT or RFQ (as the case may be);
- (bb) **Preferred Supplier** means a supplier that has been selected as a preferred supplier pursuant to section 233 of the *Local Government Regulation 2012* (Qld);
- (cc) **Pre-qualified Supplier** means a supplier that has been selected as a pre-qualified supplier pursuant to section 232 of the *Local Government Regulation 2012* (Qld);
- (dd) **Price** means:
 - (i) where the Procurement Process is for appointment as a Preferred Supplier or Pre-qualified Supplier, the rates, sums or prices stated in the Response;
 - (ii) otherwise, subject to clause 4.4, the total price stated in the Response;
- (ee) **Price Schedule** means a Response Schedule which provides a breakdown of the Price, and which may include rates, lump sums, prices, provisional sums, estimated quantities and other information;
- (ff) **Principal or Purchaser** means Banana Shire Council;
- (gg) **Procurement Documents** means:
 - (i) the RFEOI, RFT or RFQ (as the case may be); and
 - (ii) any Addenda issued pursuant to these Procurement Process Conditions,and includes all documents included in or incorporated by reference into these documents;
- (hh) **Procurement Process** means the process by which the Principal intends to, or does, invite, assess and where applicable, accept or reject Responses in respect of the Scope;
- (ii) **Procurement Process Conditions** means these procurement process conditions;
- (jj) **Quotation** means a Response lodged by a Respondent in response to an RFQ and includes all documents and information lodged with or as part of the quotation;
- (kk) **Related Local Government** means a local government that has entered into an arrangement with the Principal, as contemplated in section 235(f) of the *Local Government Regulation 2012* (Qld), to the effect that the local government may make a contract with a supplier that has been selected by the Principal to be a Preferred Supplier or Pre-qualified Supplier of goods and/or services, as if that local government had itself selected that supplier to be a Preferred Supplier or Pre-qualified Supplier of those goods and/or services.

Procurement Process Conditions

- (ll) **Respondent** means:
- (i) any person who lodges a Response; and
 - (ii) to the extent to which the term can apply to any other person who obtains a copy of any of the Procurement Documents during the Procurement Process, also includes such other persons,
- and includes a Tenderer;
- (mm) **Response** means, where these Procurement Process Conditions are incorporated into an:
- (i) RFEOI, an EOI;
 - (ii) RFT, a Tender; or
 - (iii) RFQ, a Quotation;
- (nn) **Response Closing Time** means the time identified in the General Information as the time by which Responses must be submitted as varied (if at all) pursuant to these Procurement Process Conditions;
- (oo) **Response Form** means in respect of an:
- (i) RFEOI, the document identified as the EOI form in the Response Schedules;
 - (ii) RFT or RFQ:
 - (A) the document identified as the tender form or the quotation form (as the case may be) in the Response Schedules; or
 - (B) otherwise where there is no document identified as the tender form or quotation form, any document (other than a Price Schedule) which states the total price offered by the Respondent in the Response;
- (pp) **Response Schedules** means the schedules identified in Part 5 – Response Schedules of the RFEOI or Part 6 – Response Schedules of the RFT or RFQ (as the case may be);
- (qq) **Response Validity Period** means the period stated in the General Information as the time for which Responses are to be valid as extended (if at all) pursuant to clause 4.5;
- (rr) **RFEOI (or Request for Expressions of Interest)** means the request for expressions of interest issued by the Principal and all documents included in or incorporated by reference into it (including these Procurement Process Conditions and the Scope);
- (ss) **RFQ (or Request for Quotation)** means the request for quotations issued by the Principal and all documents included in or incorporated by reference into it (including these Procurement Process Conditions, the Contract and the Scope);
- (tt) **RFT (or Request for Tender)** means the request for tenders issued by the Principal and all documents included in or incorporated by reference into it (including these Procurement Process Conditions, the Contract and the Scope);
- (uu) **Scope** means the scope described in Part 4 – Scope of the RFEOI or Part 5 – Scope of the RFT or RFQ (as the case may be) and all documents incorporated into it (whether physically or by reference), and includes any amendments provided for in an Addendum;
- (vv) **Sound Contracting Principles** has the meaning given in section 104(3) of the *Local Government Act 2009* (Qld);

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(ww) **Specified Loss** means:

- (i) any loss of, or loss of anticipated, profit, income, revenue, saving, production; business, contract or opportunity; increase in financing or operating costs; liability for loss or damage suffered by third parties; legal costs (on a solicitor and client basis); fines levied; loss of reputation or embarrassment and the cost of abating or reducing such; any other financial or economic loss; and
- (ii) any indirect, special or consequential loss, damage, cost, expense or penalty not expressly referred to in the preceding paragraph, howsoever arising;

(xx) **Tender** means a Response lodged by a Tenderer in response to an RFT and includes all documents and information lodged with or as part of the tender;

(yy) **Tender Box** means the website, email address or physical location at which the General Information states that Responses are to be submitted;

(zz) **Tenderer** means:

- (i) any person who lodges a Tender; and
- (ii) to the extent to which the term can apply to any other person who obtains a copy of any of the Procurement Documents during the Procurement Process, also includes such other persons,

and words or terms not defined in these Procurement Process Conditions but defined in a Contract have the same meaning as in the Contract, except where the context otherwise requires.

13. GENERAL PROVISIONS

13.1 **(Interpretation of Procurement Documents)** The Procurement Documents must be read and construed together and are intended to be mutually explanatory.

13.2 **(Joint and several obligations)** An obligation of two or more parties binds them jointly and each of them severally and an obligation incurred in favour of two or more parties is enforceable by them severally.

13.3 **(Headings)** Clause headings are for reference purposes only and must not be used in interpretation.

13.4 **(No limitation)** The words 'include', 'includes' and 'including' shall be read as if followed by 'without limitation'.

13.5 **(Grammatical Forms)** Where any word or phrase is given a defined meaning, any other part of speech or other grammatical form concerning the word or phrase has a corresponding meaning. Words importing the singular number include the plural number and words importing the plural number include the singular number.

13.6 **(Time)** References to time are to local time in Queensland. Where time is to be reckoned from a day or event, the day or the day of the event must be excluded. If any time period specified in the Procurement Documents expires on a day which is not a Business Day, the period will expire at the end of the next Business Day.

13.7 **(Discretion)** Unless expressly provided otherwise:

- (a) any right of the Principal pursuant to these Procurement Process Conditions may be exercised; and
- (b) any consent of the Principal required under these Procurement Process Conditions may be given, withheld or given subject to conditions,

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in the absolute discretion of the Principal without giving reasons and without reference to the Respondent unless, and then only to the extent that the Procurement Process Conditions provide otherwise.

13.8 **(Law)** A reference to 'law' includes:

- (a) legislation (including subordinate legislation), local laws, by-laws, orders, ordinances, awards, requirements and proclamations of an Authority having jurisdiction and any related fees and charges; and
- (b) certificates, licences, accreditations, clearances, authorisations, approvals, consents, and permits and any related fees and charges,

which are applicable to the Procurement Documents, the Procurement Process or the Contract or which are otherwise in force at any place where an obligation under the Contract is to be carried out.

13.9 **(Governing Law)** The Procurement Process is governed by the laws of Queensland and the Commonwealth of Australia which are in force in Queensland. The Principal and the Respondent submit to the jurisdiction of the Courts of Queensland, relevant Federal Courts and Courts competent to hear appeals from them.

13.10 **(Contra proferentem)** The *contra proferentem* rule and other rules of construction will not apply to disadvantage a party whether that party put the clause forward, was responsible for drafting all or part of it or would otherwise benefit from it.

13.11 **(Rights Cumulative)** The rights and remedies of the Principal and the Respondent provided in the Procurement Process Conditions are cumulative on each other and on any rights or remedies conferred at law or in equity.

13.12 **(Severance)** If a provision of the Procurement Process Conditions is void or unenforceable it must be severed and the provisions that are not void or unenforceable are unaffected by the severance.

13.13 **(No waiver)** No waiver by the Principal of a provision of these Procurement Process Conditions is binding unless made in writing.

13.14 **(Other references)** A reference to:

- (a) a person includes any other legal entity and a reference to a legal entity includes a person;
- (b) the Respondent or the Principal includes their respective heirs, executors, successors and permitted assigns;
- (c) writing includes any mode of representing or reproducing words in tangible and permanently visible form, and includes email and facsimile;
- (d) a monetary amount is a reference to an Australian currency amount; and
- (e) a measurement or quantity is a reference to an Australian legal unit of measurement as defined under the *National Measurement Act 1960* (Cth).



SCOPE

Taroom Sewage Treatment Plant – Civil
Works

CONTRACT NO: T2425.13

1. INTERPRETATION AND DEFINITIONS

1.1 (Documents comprising this Scope) The Scope comprises the following documents:

- T2425.13 Taroom Sewage Treatment Plant - Civil Works - Pricing Schedule
- T2425.13 Taroom Sewage Treatment Plant - Civil Works - Taroom STP Works Specification
- T2425.13 Taroom Sewage Treatment Plant - Civil Works - Technical Specification – Earthworks
- T2425.13 Taroom Sewage Treatment Plant - Civil Works -Technical Specification – Demolition
- T2425.13 Taroom Sewage Treatment Plant - Civil Works - Concrete Works Specification
- TARSTP-DWG-CIV-0002_2
- TARSTP-DWG-CIV-0003_2
- TARSTP-DWG-CIV-0014_1
- TARSTP-DWG-STR-0010_0
- TARSTP-DWG-STR-0011_0
- TARSTP-DWG-STR-1001_0
- TARSTP-DWG-STR-1012_0
- TARSTP-DWG-STR-1015_0
- TARSTP-DWG-STR-1028_2
- T2425.13 Taroom Sewage Treatment Plant - Civil Works - General Specification

1.2 (**Precedence**) If there is any ambiguity, inconsistency, conflict or discrepancy between any of the documents listed in clause 1.1, then the document which contains the higher standard or more onerous obligation will prevail. If that does not resolve the ambiguity, inconsistency, conflict or discrepancy then the documents will take precedence in the order set out in clause 1.1 with the document listed in the order.

2. APPROVALS AND OTHER LAW

2.1 (**Identifying, obtaining and maintaining Approvals**) The Supplier must identify and notify the Principal of all Approvals which are necessary for the proper performance of the Services (other than Approvals which the Principal has advised the Supplier it has already obtained). The Supplier must obtain and maintain all such Approvals until all of the Supplier's other obligations under the Contract are complete. The cost of obtaining and maintaining all such Approvals shall be borne by the Supplier.

2.2 (**Compliance**) The Supplier must and must ensure that its Personnel comply with all Approvals and other law which are in anyway applicable to the Services, including, unless the Contract expressly provides otherwise, by paying all fees, royalties, levies, charges, costs, expenses, taxes or duties.

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- 2.3 **(Obtaining or granting of Approvals by Principal)** The Principal gives no warranty and makes no representation that:
- (a) it will be able to obtain, or obtain within any particular time; or
 - (b) where the Principal is the relevant Authority, that it will grant,
- any Approval required for the Supplier to perform the Services.
- 2.4 **(No fetter)** Nothing in the Contract shall be taken to fetter the power, rights or authority of the Principal as the sublessor under the *Land Act 1994* (Qld) or an Authority under the *Local Government Act 2009* (Qld), the *Local Government Regulation 2012* (Qld) or any other law.
- 2.5 **(Provision of the Services)** The Supplier must, and warrants and represents that it will, perform the Services so that the Site, at all times during the Term, complies with all Approvals and other applicable law.
- 2.6 **(Obligation to report breach)** The Supplier must notify the Principal immediately if it becomes aware of or reasonably suspects in the course of carrying out its obligations under the Contract, that the Supplier has breached an obligation under clauses 2.1, 2.2 or 2.3. Unless otherwise directed by the Principal, the Supplier must take immediate steps to remedy such a breach at its expense.

3. SERVICE LEVELS

- 3.1 In this clause:
- (a) **Review Period** means the period stated in clause **Error! Reference source not found.** below in which the performance of the Supplier against a Service Level is to be reviewed;
 - (b) **Service Levels** means the service level(s) or key performance indicator(s) (if any) described as such in clause 3.2 below.
- 3.2 **(Guarantee)** The Supplier must, and guarantees that it will, in providing the Services and carrying out its other obligations under the Contract, achieve or exceed all Service Levels in every Review Period.
- 3.3 **(Measuring performance)** The Principal will review the performance of the Supplier against the Service Levels at the times in clause **Error! Reference source not found.** below, and otherwise on the giving of reasonable notice. The Principal may direct the Supplier to provide a written explanation for its performance against any Service Level.
- 3.4 **(Performance liquidated damages)** If the Supplier has failed to meet any Service Level, the Supplier shall be indebted to the Principal for performance liquidated damages calculated in accordance with clause **Error! Reference source not found.**
- 3.5 **(Recovery of liquidated damages)** The Principal may deduct such performance liquidated damages from moneys otherwise owing to the Supplier to recover the performance liquidated damages. The Parties agree that the performance liquidated damages are an agreed genuine pre-estimate of the Principal's loss if the Supplier breaches its obligations under the Contract.
- 3.6 **(General damages)** If, for any reason, the Principal's entitlement to performance liquidated damages is found to be void, voidable or otherwise unenforceable (in whole or part), or the Principal is otherwise unable to recover the whole of the performance liquidated damages from the Supplier, the Supplier shall be liable to the Principal for any loss, damage, cost or expense suffered or incurred by the Principal as a result of the Supplier failing to achieve the Service Levels.
- 3.7 **(Review of Service Levels)** The representatives of the Parties may review the Service Levels from time to time and amend them in any way including by adding additional Service Levels,

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removing or amending Service Levels, amending the method of measuring performance or the consequence of achieving or failing to achieve a Service Level.

3.8 (Substantial breach) Failing to achieve or exceed:

(a) the same Service Level for three consecutive Review Periods, even though the Supplier may have achieved or exceeded some or all of the other Service Levels for those same Review Periods; or

(b) any two Service Levels for two consecutive Review Periods,

shall constitute a substantial breach of the Contract.

4. PROCUREMENT SERVICES

4.1 Where the Services require the Supplier to manage, conduct or otherwise participate in a Procurement Process for the engagement of a contractor or other supplier by the Principal, then the Supplier must, and must ensure that its Personnel, to the extent that it is within the control of the Supplier or its Personnel ensure that the procurement process is conducted consistently with:

(a) the Principal's procurement policy;

(b) the *Local Government Act 2009* (Qld) and the *Local Government Regulation 2012* (Qld);

(c) the requirements of the request for tender or request for quotation documentation issued to tenderers;

(d) any probity plan or evaluation plan implemented for the Procurement Process;

(e) principles of probity; and

(f) Good Industry Practice,

with a view to ensuring that the selected contractor or supplier is the most advantageous to the Principal having regard to the sound contracting principles in section 104 of the *Local Government Act 2009* (Qld).

5. SUPERINTENDENT SERVICES

5.1 (Primary obligations) Where the Services require the Supplier or any of its Personnel to fulfil the role and functions of the Superintendent or similar under a Construction Contract, the Supplier must, and must ensure that its Personnel, in doing so:

(a) comply with and act consistently with any requirements of the Construction Contract as to the manner in which those roles and functions are to be fulfilled including (where applicable) by:

(i) giving any directions, documents or notices required or permitted to be given by the superintendent under the Construction Contract; and

(ii) assessing all claims made under the Construction Contract,

in accordance with the requirements of the Construction Contract for the giving of such directions, documents and notices and the making of such assessments;

(b) use its or their reasonable endeavours to ensure that the Construction Contractor complies with the Construction Contract, including by exercising the available rights and powers of the superintendent under the Contract;

(c) keep the Principal fully informed of all relevant matters under the Construction Contract;

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- (d) unless and then only to the extent (if any) that to do so would be inconsistent with the Construction Contract:
 - (i) act as the Principal's agent;
 - (ii) act in the best interests of the Principal;
 - (iii) seek and act in accordance with the instructions of the Principal; and
 - (iv) do all other things necessary to protect the Principal's rights and interests under the Construction Contract.
- 5.2 **(No waiver or limitation)** The Supplier must not, and must ensure that its Personnel do not, do or omit to do anything where that act or omission could operate so as to waive or limit the rights of the Principal under or in connection with the Construction Contract or otherwise prevent the Principal from exercising any right under or in connection with the Construction Contract.
- 5.3 **(Security of payments)** The Supplier:
 - (a) is authorised to prepare and issue payment schedules in response to any payment claims made by the Construction Contractor pursuant to the *Building Industry Fairness (Security of Payment) Act 2017* (Qld) in relation to the Construction Contract;
 - (b) must take all reasonable steps to identify all documents which may constitute such payment claims and immediately provide a copy of such documents to the Principal;
 - (c) if requested by the Principal, promptly give to the Principal a copy of the payment claim and any other information or documentation required by the Principal in connection with the payment claim;
 - (d) must provide such other assistance as the Principal may reasonably require in connection with the payment claim and any related proceedings whether under the Act or otherwise.
- 5.4 **(Definitions)** In this clause:
 - (a) **Construction Contract** means a construction contract between the Principal and the Construction Contractor for the construction of any works the subject of the Services, and includes any construction contract specifically identified in the Contract;
 - (b) **Construction Contractor** means the contractor engaged by the Principal under the Construction Contract;
 - (c) **Superintendent** means the person appointed to fulfil the role and functions of the superintendent pursuant to a Construction Contract, and includes a superintendent's representative.

6. DESIGN SERVICES

- 6.1 **(Design services)** In addition to the warranties and representations contained in the General Conditions, where the Services include Design Work, the Supplier warrants and represents that the works the subject of the Design Work are neither over-designed nor under-designed and that to the extent to which it is within the control of the Supplier, any works constructed in accordance with the Design Documents will:
 - (a) meet or exceed the minimum performance characteristics and standards identified in the Contract;
 - (b) be fit for the purpose or purposes stated in or to be reasonably inferred from the Contract and any other purpose for which such works are commonly provided or which has been made known by the Principal to the Supplier; and

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- (c) be capable of achieving the Design Life.
- 6.2 **(Use of Design Documents)** In addition to the rights provided under clause 31 of the General Conditions, the Supplier consents to the Principal using, copying, reproducing, modifying and adapting the Design Documents for any purpose in connection with the construction, use, maintenance, operation, modification or replication of the Works or works similar to the Works.
- 6.3 **(Definitions)** In this clause:
- (a) **Design Documents** means the drawings, specifications and other information, samples, models, patterns and the like (if any) required by the Contract and created (including by the Supplier) as part of the Services;
- (b) **Design Life** means the design life stated in or to be reasonably inferred from the Scope;
- (c) **Design Work** means the preparation, review, modification or certification of any documentation describing the design and/or specification requirements of any work or item;
- (d) **Works** means the works the subject of the Design Documents.

7. BIOSECURITY MANAGEMENT

- 7.1 **(Definitions)** In this clause:
- (a) a **biosecurity risk** is the risk that exists when dealing with:
- (i) any pest, disease, or contaminant (including plants, seeds, spores, eggs, vertebrate and invertebrate pest); or
- (ii) something that could carry a pest, disease or contaminant (e.g. animals, plants, soil, equipment and water—known as ‘carriers’).
- (b) a **potential biosecurity risk** is a biosecurity risk that does not currently occur at the Site but which has the capacity to occur at the Site. It may be present but not visible or may be introduced during the performance of the Supplier’s obligations. It includes risks associated with carriers and the movement and sourcing of materials, vehicles, and machinery; and the disturbance, import or export of soils.
- (c) a **known biosecurity risk** is a biosecurity risk that is currently recorded within the footprint or proximity of the Site which is:
- (i) identified within biosecurity plans or programs active for the area;
- (ii) identified during the performance of the Supplier’s obligations; or
- (iii) otherwise identified by the Principal.
- 7.2 **(Preparation of plan)** The Supplier shall prepare a biosecurity risk management plan (**BRMP**) to ensure reasonable and practical steps are taken to address biosecurity risks and that the Supplier meets its general biosecurity obligation (as that term is used in the *Biosecurity Act 2014* (Qld)). The primary purpose of the BRMP is to address both potential biosecurity risks and known biosecurity risks.
- 7.3 **(Training)** The Supplier shall ensure that all relevant Personnel are trained to be aware of biosecurity risks.
- 7.4 **(Notice of breach or risk)** If at any time during the performance of the Supplier’s obligations a breach of the BRMP or a significant biosecurity risk is identified, then the Supplier must immediately contact the Principal for direction.

8. PRINCIPAL SUPPLIED INFORMATION AND OTHER INVESTIGATIONS

- 8.1 **(Definitions)** In this clause “**Principal Supplied Information**” means any information relating to the Contract which does not form part of the Contract but which is or has been provided or made available by or on behalf of the Principal to the Supplier in any form, whether such information is made available before or after the date of the Contract.
- 8.2 **(Acknowledgement and agreement by Supplier)** The Supplier acknowledges and agrees that:
- (a) the Principal gives no warranty and makes no representation in respect of this Contract. Without limiting this, the Principal gives no warranty and makes no representation:
 - (i) that the Principal Supplied Information is accurate, adequate or complete; and
 - (ii) as to the physical condition, suitability or other characteristics of the Site;
 - (b) the Supplier has not relied and will not rely on the Principal Supplied Information unless and until the Supplier has independently verified the adequacy, accuracy and completeness of that information;
 - (c) the Supplier:
 - (i) has carefully, thoroughly and critically reviewed, examined, investigated, inspected and checked the Principal Supplied Information and the Site and undertaken all other necessary enquiries and investigations to satisfy itself of the suitability of the Site to enable the Supplier to comply with its obligations under this Contract and of any other logistical considerations, risks, contingencies and other circumstances which could have an effect on the cost of carrying out and completing Services or compliance with the Supplier's other obligations under the Contract;
 - (ii) the Supplier has made its own interpretations, deductions and conclusions from such enquiries and investigations and accepts full responsibility for those interpretations, deductions and conclusions; and
 - (iii) the Supplier, having undertaken those enquiries and investigations, accepts the risk of any inadequacy, inefficiency, deficiency or fault in the Site and that it can and will carry out and complete the Services in accordance with the Contract and comply with its other obligations under the Contract for the Price (as adjusted pursuant to the Contract); and
- 8.3 **(No liability)** The Principal shall not be liable upon any Claim by the Supplier in connection with the Principal Supplied Information or the physical condition, suitability or other characteristics of the Site.

9. SUPPLIER'S PERSONNEL

- 9.1 **(Minimum Personnel levels)** The Supplier must ensure that at all times during the Term, the minimum number of each type of Personnel identified in the Contract perform the roles identified in the Contract for the periods indicated in the Contract (**Minimum Personnel Levels**). The Minimum Personnel Levels must be maintained notwithstanding any planned or unplanned absences, personal breaks, attendance at training or performance of other duties by any Personnel. Provision of the Minimum Personnel Levels does not relieve the Supplier of any obligation under the Contract. If further Personnel are required in addition to the Minimum Personnel Levels for the Supplier to comply with its obligations under the Contract, then the Supplier must provide such additional Personnel at its expense.
- 9.2 **(Police checks)** If the Principal directs the Supplier to obtain police checks on particular Personnel of the Supplier (“Nominated Persons”) then the Supplier must not permit a Nominated Person to perform any part of the Services or to have access to any part of the Site unless and until 5 Business Days after the Supplier has given the Principal a written copy of a

Scope of Work



criminal history check produced by the Queensland Police Service for that Nominated Person. If the criminal history check contains any entries, the Principal may, in its absolute discretion, notify the Supplier that the Nominated Person is not permitted to perform the Services or may otherwise place conditions upon that person's role in performing the Services.

10. MANAGEMENT PLAN

10.1 **(Preparation)** The Supplier must, prior to commencing the Services, prepare and obtain the Principal's approval of a management plan or plans which addresses the following matters:

- (a) Contractor submit the plan schedule to the project manager

If the Principal notifies the Supplier that all or part of the plan(s) is not suitable, the Supplier must at its cost amend and resubmit the relevant plan(s).

10.2 **(Updating)** The management plan must be updated as often as required to:

- (a) ensure that the Supplier continues to comply with the warranties and representations as to Supplier Documents given in the Contract;
- (b) address any deficiencies in the systems described in the plan of which the Supplier becomes aware; and
- (c) take into account any Variations or improvements in the Services.

A copy of a revised management plan must be submitted to the Principal for approval prior to implementation of it.

10.3 **(Compliance)** The Supplier must comply with the management plan at all times during the Term. Such compliance will not release or discharge the Supplier from any liability or obligation under the Contract.

11. MEETINGS

11.1 **(Meetings)** The Supplier must, at the following times:

- (a) Meeting schedule send to the the project manager in advance

and when otherwise reasonably required by the Principal, meet and in good faith discuss the performance of the Supplier and/or any other matter concerning the Principal in connection with the Contract including:

- (b) the Supplier's performance of its obligations under this Contract, including the Service Level(s) (if any) identified in the Contract;
- (c) to promote safer and quieter work practices; and
- (d) improvements to efficiency of the Supplier's obligations under the Contract.

11.2 **(Recommendations or directions)** The Supplier must comply with any reasonable recommendations or directions given by the Principal in relation to the performance of the Supplier's obligations under the Contract. Such compliance will not release or discharge the Supplier from any liability or obligation under the Contract.

12. SERVICE RECORDS AND AUDITING

12.1 **(Creation)** The Supplier must:

- (a) create and maintain the following:
 - (i) list of all equipment and it service date

Scope of Work



- (b) create and maintain the records, reports and other documents required by the Contract and any other records, reports or documents reasonably required by the Principal in connection with the Contract; and
- (c) create any document required to be prepared under the Supplier's management plan prepared under the Contract,

('Service Records').

12.2 **(Audit)** The Principal may at any time during the Term, on the giving of reasonable notice, audit the Supplier's compliance with the Contract or any obligation under it. The Supplier shall facilitate the audit by:

- (a) allowing the auditors to undertake any inspections or tests;
- (b) providing such assistance, information and access to the Site, systems and equipment and other cooperation;
- (c) providing to the auditor with copies of, facilitating the copying by the auditor of, the Services Records and all other records, information and documentation,

reasonably required by the auditor.

If the audit reveals any non-compliance by the Supplier with its obligations under the Contract, then the costs reasonably and necessarily incurred by the Principal in conducting the audit shall be a debt due and payable by the Supplier. Otherwise, the Principal shall bear the cost of the audit.

13. TRANSITION OUT

13.1 **(Definitions)** In this clause:

- (a) **Transition Out Period** means a period of up to agreed (12 or 24) months after the expiry of the Term or termination of the Contract;
- (b) **Transition Out Plan** means that plan the Supplier is required to prepare in accordance with clause 13.2; and
- (c) **Transition Out Services** means, acting in good faith, doing all things reasonably required to facilitate the transition of the Supplier's obligations under the Contract from the Supplier to another contractor or the Principal and may include:
 - (i) conducting a walk-through of each part of the Sites with potential new contractors and the Principal;
 - (ii) doing all things reasonable and necessary to facilitate the Supplier's subcontractors utilised in the provision of the Services to enter into contracts with the Principal or another contractor engaged by the Principal on terms and conditions no less favourable than those offered to the Supplier;
 - (iii) providing to the Principal copies of up-to-date Service Records (if any) and programs of all Services;
 - (iv) otherwise complying with all directions and doing all things reasonably requested by the Principal (including providing advice, assistance, information, training, access to systems and equipment, executing deeds, documents and instruments) to ensure the completion and continuance of the Supplier's obligations under this Contract;

13.2 **(Transition Out Plan)** Unless otherwise directed by the Principal, no later than three calendar months prior to the end of the Term, the Supplier must prepare, and submit to the Principal for approval, a plan for the performance of the Transition Out Services. The Transition Out Plan

Scope of Work



must detail how the Supplier will perform the Transition Out Services and must contain such other detail as may be reasonably required by the Principal.

- 13.3 **(Transition Out Services)** The Supplier must perform the Transition Out Services in accordance with the approved Transition Out Plan and the reasonable directions of the Principal.
- 13.4 **(Transition Out Period)** If directed by the Principal, the Supplier must continue to perform the Supplier's obligations under the Contract for the Transition Out Period.
- 13.5 **(Charges)** The Supplier may claim payment for the Transition Out Services in accordance with the price specified for those Services under the Contract. Where no price is specified in this Contract, the Supplier shall be entitled to claim its reasonable costs of carrying out the Transition Out Services as a Variation.
- 13.6 **(Costs)** Any costs, loss or expense suffered or incurred by the Principal because of a breach of this clause 13 will be a debt due and owing by the Supplier to the Principal.

14. PERSONAL PROPERTY SECURITIES

- 14.1 **(Definitions)** In this clause, PPS Act means the *Personal Property Securities Act 2009* (Cth). Terms used in this clause which are defined in the PPS Act have the meanings given in that Act.
- 14.2 **(Disclosure)** If this Contract contains a security interest, then each Party agrees for the purposes of section 275(6) of the PPS Act that it will not disclose information of the type referred to in section 275(1) of the PPS Act where a request is made under section 275(1) of the PPS Act in relation to this Contract or any part of it, except in circumstances where the Party is compelled by law (other than section 275(1) of the PPS Act) to make that disclosure.
- 14.3 **(Supplier's obligations)** If the Principal determines that any clause of this Contract, or a transaction contemplated by this Contract or in connection with the performance of its obligations under this Contract constitutes, or is likely to give rise to a security interest in respect of which the Principal is the security holder, then:
- (a) the Supplier must, within the time required by the Principal, provide all assistance and cooperation requested by the Principal that the Principal determines is reasonably required to:
- (i) register and maintain the registration of its security interest on the personal property securities register within any applicable time limits relevant to the effectiveness of the security interest;
 - (ii) ensure that the Principal's security interest is enforceable against third parties, perfected or otherwise effective;
 - (iii) ensure that the security interest has the appropriate priority required by the Principal (including where applicable as a purchase money security interest);
 - (iv) ensure that any security interest granted temporary perfection under the PPS Act is perfected by registration or other appropriate means prior to any applicable expiry of that temporary perfection; and
 - (v) enable the Principal to register financing statements or financing change statements under the PPS Act with respect to any such security interest;
 - (vi) the Supplier waives the right to receive notice of a verification statement in relation to the registration of that security interest;
 - (vii) the Supplier shall not register or permit to be registered any other security interest in respect of the personal property that comprises the collateral in

Scope of Work



respect of that security interest other than one that has been consented to or granted by the Principal

- (viii) the Supplier shall not cause or allow any of the Supplier's personal property to become an accession to the Principal's personal property or cause or allow the Principal's personal property to become an Accession to the Supplier's personal property without the prior consent of the Principal, and
- (ix) the Supplier must immediately notify the Principal if any other person claims or attempts to enforce a security interest:
 - (A) in the Principal's personal property, or
 - (B) in the Supplier's personal property to the extent that that purported enforcement affects or has the potential to affect the Supplier's ability to carry out its obligations in accordance with the terms of the Contract.

Taroom STP - Works Specification



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Revision	Date	Description	Author	Reviewed	Approved
A	19/04/2024	Issued as Draft for BSC Review	N. Sudomo	F. Wecker	F. Wecker

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Tables

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1. Glossary of Terms

Abbreviations	
AS	Australian Standard
BSC	Banana Shire Council
BOQ	Bill of Quantity
GANDEN	GANDEN Engineers and Project Managers
IFC	Issued for Construction
IFR	Issued for Review
STP	Sewage Treatment Plant

2. Introduction

2.1 Project Background

Banana Shire Council is responsible for the collection, treatment and disposal of sewage for the town of Taroom. A new packaged Sewage Treatment Plant (STP) was constructed at Taroom on the site of the existing treatment facility during 2021-2022.

This contract is for completion of civil works associated with the new treatment plant including earthworks, demolition of trickling filter, concrete works, etc.

2.2 Site Location

The location of the works, Taroom STP, is on Tai Shue Street, Taroom, Central Queensland, 4420. The site access is directly off Tai Shue Street.

Aerial photography provided in Figure 2-1 – Aerial view of Taroom STP.



Figure 2-1 – Aerial view of Taroom STP

2.3 Objectives

The objective of this work package is to engage a competent subcontractor to carry out work as per scope of work. The detailed design and documentation of demolition, civil earthworks and concrete works as described within the detailed scope of work within this Request for Price, and Technical Specifications and drawings provided by GANDEN Engineers.

The detailed scope of work is included in Section 3.2 Detailed Scope of Work 3.23.2. Also refer **Error! Reference source not found.** for Price details required for consideration by BSC.

2.4 Price Submission

2.4.1 Price and submission information

- Submit as per Description of Work in section 3 - Scope of Work
- No mandatory site inspection requirements
- To ensure your Price is processed accurately and in a timely manner please adhere to the following:
 - Provide completed Bill of Quantity (BOQ) if required
 - Complete Price/Price Schedule
 - Ensure all associated costs have been included (Travel, accommodation, etc.)
 - Price format submitted in PDF format
 - Prices shall be valid for (3) three calendar months after date of Price close
 - Provide all required documentation e.g., Insurance, forms, schedules etc
- Acceptance of Price:
 - BSC is not obliged to accept the lowest, or any Price, and may accept the Price most advantageous to it
 - BSC is not obliged to accept the lowest, or any Price, and may accept the Price most advantageous to it.
 - BSC reserves the right to award the RFT as a whole, in parts, to one or more suppliers, or not at all
 - No Price shall be taken as accepted and no contract will be formed, until the supplier
 - (a) executes and returns the Formal Instrument of Agreement to the RFT, or alternatively
 - (b) receives a council issued purchase order to the price of the supply
 - Any variances are required to be submitted and approved prior to continuing. ONLY an amended council issued purchase order reflecting the required variances is accepted for any additional costs.

2.4.2 Conflict of interest

Please advise if you have an association or connection to current Councilor's members of staff. If yes, please indicate persons you have an association with.

3. Scope of Work

3.1 General

3.1.1 Standards

Works under this Consultancy shall be undertaken in accordance with current relevant Australian Standards and Codes. Technical specifications and Issued For Construction (IFC) design drawings for each of the packages of work have been provided to describe the works required at the Taroom STP site.

3.1.2 Works Description

The works under this contract has been split into separable portions that are ordered within the chronological sequence intended during the design development.

The work packs can be broken down as follows:

- Site Familiarisation & Preliminaries
- Demolitions Works
- Civil Earthworks
- Concrete Works – Apron Slabs, and
- Inlet Works Modifications.

It is Councils' preference for a single contractor to perform all works, however Council may elect to engage one or multiple parties to complete the works.

3.2 Detailed Scope of Work

3.2.1 Site Familiarisation, Preliminaries, and As-Constructed Information

This is considered a mandatory requirement -

- Conduct site visit with Council's nominated representative/s at Taroom Sewage Treatment Plant
- Review available information and existing infrastructure on the site
- Consider factors relevant to the Separable Portions included within the contract (e.g, confirm areas of work, laydown areas, etc).
- Provide construction methodology, temporary works design, permits, and all other documentation necessary prior to mobilisation on site, and seek feedback from Council Officers
- Allowance for site inductions for all subcontractor personnel that will be involved in the works
- Provide all necessary PPE required to deliver the work safely
- Participate in all the site safety meetings
- Prepare As Constructed survey

Delivery of all material needed to complete the works.

Unless advised otherwise in writing or specifically excluded from the scope, the contractor shall allow for supplying all plant, cranes, Frannas, labour, consumables, lifting equipment, access equipment, tools, materials, all types of fasteners, anchor bolts, chemical sets and all resources necessary to deliver this scope of work.

Should there be a discrepancy between the scope of work and any other documentation, the contractor shall contact Banana Shire for more clarification.

3.2.2 Demolition Works

The Contractor shall familiarise themselves with the Technical Specification – Demolition for a description of the works. The Contractor shall also familiarise themselves with the GANDEN design drawings, to inform other permanent works that are proposed for the site.

Contractor to nominate within their Scope Appreciation/Methodology included within their tender submission. This may include items such as bringing concrete to a nearby crushing plant to recycle concrete.

All material is to be disposed of off-site within an approved location. Costs associated with the disposal of contaminated material are to be included within the proposal as a unit rate per cubic meter.

The demolition works can be summarised as follows:

- Demolition of existing Biological Trickling filter, including:
 - Inspection of existing structure
 - Removal of any stored water and/or sewage
 - Dismantling and removal of existing mechanical equipment, including access platforms, sprinkler system, cable trays and above-ground pipework
 - Removal and safe disposal of filter media and loose material within the trickling filter
 - Demolition and removal of reinforced concrete walls and base
 - Demolition and removal of existing access staircase landing platform
 - Backfilling and compaction with engineered fill to 98% compaction
- Removal of redundant 1050mm diameter pits as nominated within the drawings and technical specification
- Removal/ abandoning of the following redundant buried/aboveground pipework as nominated within the design drawings and technical specification:
 - Pipework from Imhoff tank to trickling filter
 - A-Recycle pipework
- Relocation of 1050mm diameter scour pit within North-East portion of site
- Removal of debris, demolition materials and waste from the worksite

3.2.3 Earthworks

The Contractor shall familiarise themselves with Technical Specification – Earthworks, as well as the GANDEN design drawings for a description of the works. The Contractor shall also familiarise themselves with the structural design drawings, to inform of other permanent works that are proposed for the site.

3.2.4 Concrete Works

Construction of these packages cannot be commenced until demolitions and earthworks have been completed.

The Contractor shall take responsibility for carrying out concrete works in accordance with the Technical Specification - Minor Concrete Works document, as well as all reference drawings included with the Tender package.

3.2.4.1 Concrete Works – Apron Slab and Access Road

The following drawings describe the scope required under this section of the works:

- TARSTP-DWG-STR-0010_0
- TARSTP-DWG-STR-0011_0

- TARSTP-DWG-STR-101_0
- TARSTP-DWG-STR-0028_2

The contractor shall familiarise themselves with the other drawings within the set for an understanding of other works being undertaken on site.

This work is inclusive of the following activities:

- Level 1 Geotechnical Supervision to ensure new concrete works subgrade is compacted as nominated within design drawing set
- Construction of 150mm thick non-trafficable apron slabs around existing aerobic tank area and East of existing process building
- Construction of new varying thickness trafficable access road to the West of the existing process building
- Installation of 9 new surface-mounted bollards to restrict vehicle access from the non-trafficable apron slab/footpath

3.2.4.2 Inlet Works Modifications

The following drawings describe the scope required:

- TARSTP-DWG-STR-0010_0
- TARSTP-DWG-STR-0011_0
- TARSTP-DWG-STR-1010_0
- TARSTP-DWG-STR-1012_0
- TARSTP-DWG-STR-1015_0
- TARSTP-DWG-MEC-1001_0
- TARSTP-DWG-MEC-1002_0

This work is inclusive of the following activities:

- Level 1 Geotechnical Supervision to ensure new concrete works subgrade is compacted as nominated within design drawing set
- Installation of screw piles as nominated within the design drawings
- Construction of a new inlet works slab to provide stability to the existing structure, whilst supporting the existing incoming gravity pipework with Anchorage AG631 adjustable height pipe supports
- Ensuring the existing structure is raised/lowered before dowelling new inlet works slab to ensure that key levels are maintained within the existing channel
- Fabrication and installation of new manual bar screens
- Modification of emergency bypass to treatment plant pipework by raising pipeline nominally 50mm (to achieve 1% grade to chamber downstream of inlet works screen) and installing hydrotite to seal anulus between pipe and wall
- Installing two (2) weir plates
- Grouting within bypass and overflow chambers to promote drainage
- Saw-cutting, installation of stainless steel isolation plate, and grout-filling within unused inlet works area to allow for construction of wheelbarrow/wheel bin footpath area
- Construction of footpath from inlet works to join with access path to the existing process building

4. Price Schedule

Contractors submitting Prices are required to submit a lump sum price for services/works as presented in the Pricing Schedule.

Contractors shall also provide details of the personell and equipment proposed for use during the contract together with their hourly rates by completing the respective schedules.

These rates shall be used in determination of the quantum of any variations (if required) to the specific scope of work.

5. Photos



Figure 5-1 - Existing Inlet screen



Figure 5-2 - Existing Inlet screen location

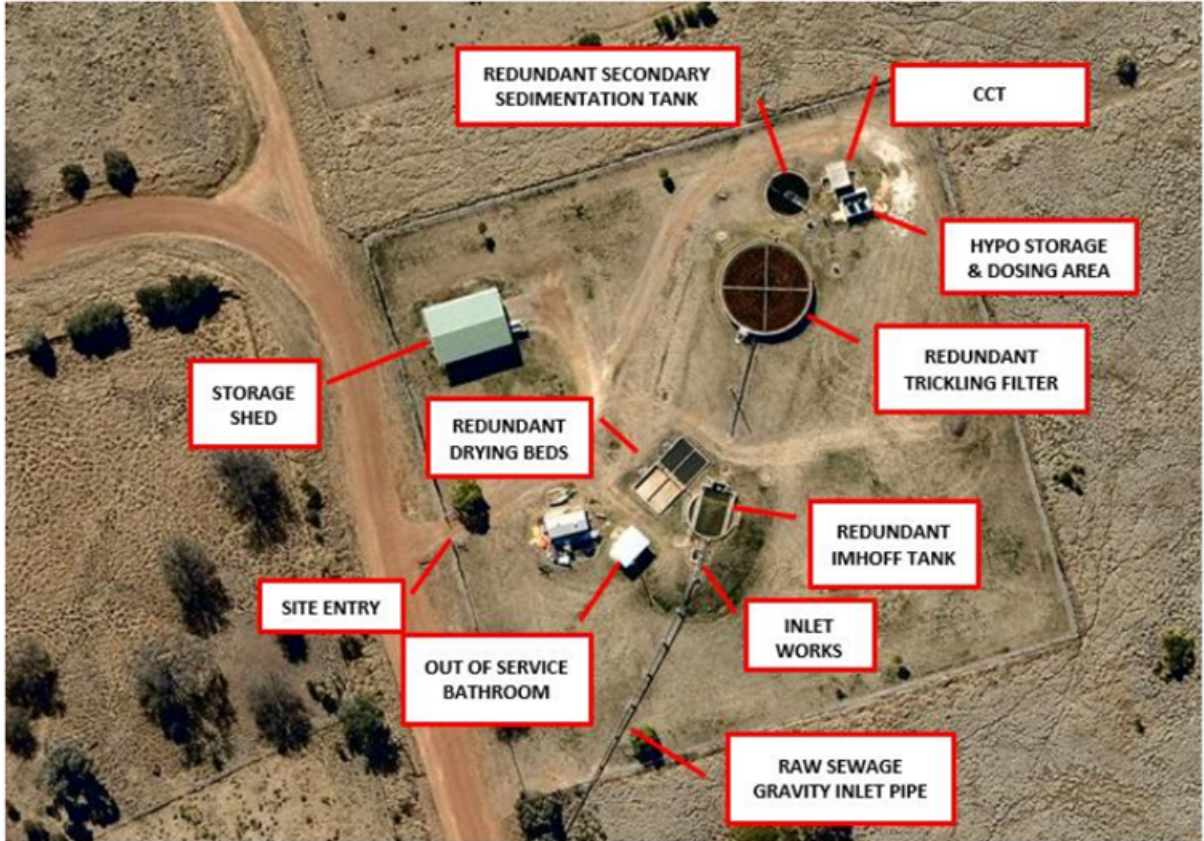


Figure 5-3 - Site Layout prior to recent upgrade works



Figure 5-4 - Biological Trickling Filter



Figure 5-5 - Biological Trickling Filter Access Structure



Figure 5-6 - Trickling Filter Inlet Pipe



Figure 5-7 - 1050mm Dia. scour pit within the proposed swale

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Taroom Sewage Treatment Plant



Technical Specification: Earthworks

Doc N°: 2766-SPC-CIV-0001

Rev 0

2 May 2023



Principal:

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Revision	Date	Description	Author	Reviewed	Approved
Rev 0	2/05/2023	Technical Specification Earthwork	A. Chilito	F. Wecker	T.Nel

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1. Glossary of Terms

Abbreviations	
AS	Australian Standard
BSC	Banana Shire Council
EIC	Electrical, Instrumentation & Controls
GANDEN	GANDEN Engineers and Project Managers
PPR	Principal Project Requirements
STP	Sewage Treatment Plant
VSD	Variable Speed Drive
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant
WSA	Water Services Association (Australia)
NZS	New Zealand Standard
ISO	International Standard Organization
NATA	National Association of Testing Authorities
GTA	Geotechnical Testing Authority

2. Introduction

The purpose of this specification is to define minimum requirements for undertaking earthworks required within the Taroom Sewage Treatment Plant for the proposed upgrade works.

2.1 Project History and Site Layout

Project history has been defined within 2766-REP-0001 – Basis of Design Report.

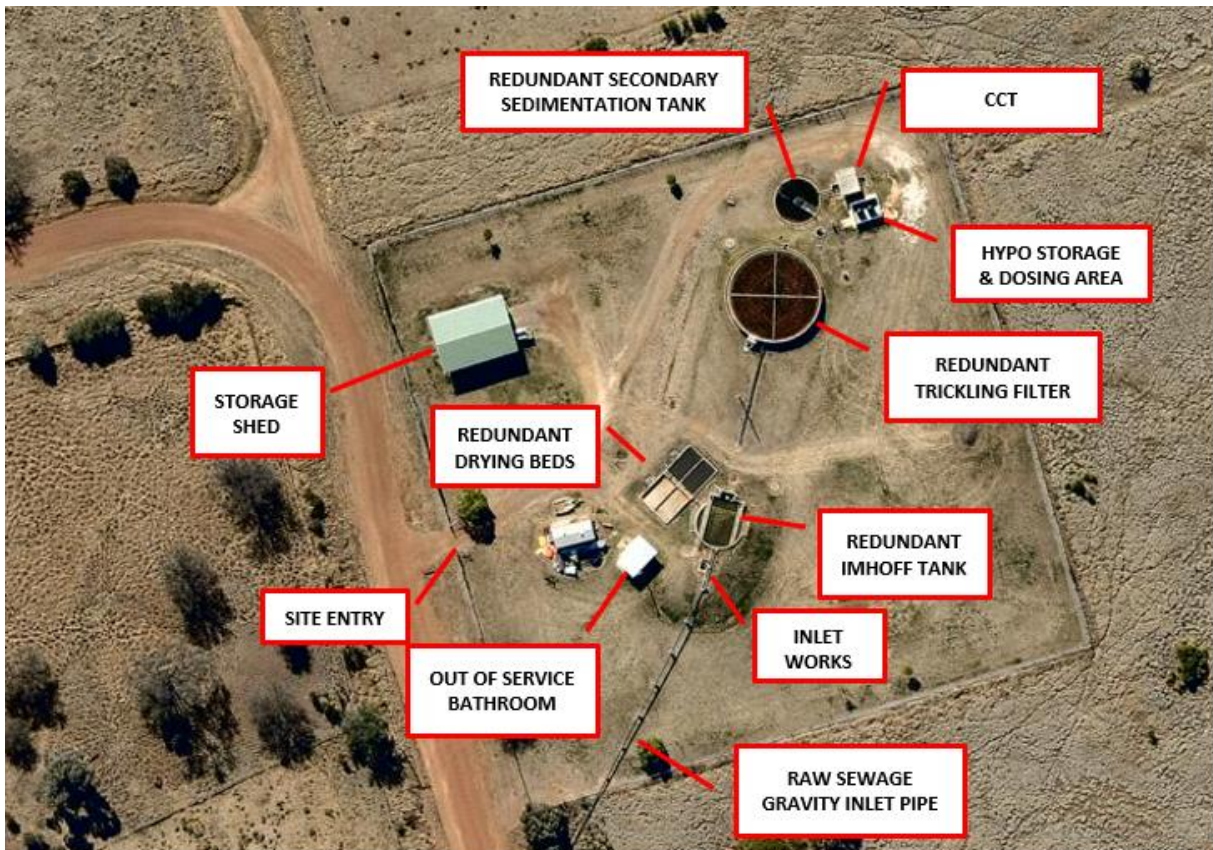


Figure 1 - Site Layout (prior to recent upgrade works)

2.2 Site Conditions

Works are located within an operational sewage treatment plant. The Contractor shall confine all work within the property to minimize disturbance. All spoil material may have been contaminated by raw sewage and are to be disposed of by the Contractor at an approved facility. The Contractor is responsible for the cost of all material disposal.

2.2.1 Site Climatic Conditions

The Taroom Sewage Treatment Plant (STP) typical atmospheric conditions listed in Table 1 below:

Table 1 – Site Climatic Conditions

Parameter	Value
Altitude	202m above sea level
Barometric Pressure	101.861 Kpa (average)
Ambient Temperature	min 7°C, max 34 °C
Relative Humidity	46-84%
Exposure	Direct to Ultraviolet radiation
Wind Region	A4, AS 1170.2

3. Earthworks General Requirements

3.1 Scope

Earthwork is related to all work involving the loosening, removing, depositing, shaping and compacting soil or rock and is also used to describe the structure resulting from this operation. The principal objective of the process is to facilitate the construction of other assets, such as pavements and structures and to provide a long-term, stable platform of adequate strength.

The execution of earth movements implies risks for safety and the environment, and in this document, the corresponding technical specification will be described.

3.2 Access Management

The Contractor is responsible for management of the Earthwork site for the duration of the works. This includes site fencing, control of access to the area of works and the safe storage of any machinery and materials associated with the works. As the earthwork is within the boundary of the working sewage treatment plant, access to works and machinery will be coordinated with Banana Shire.

To ensure the risks related to the earthwork being undertaken are properly managed the following activities shall be performed prior to the commencement of the task:

- The pre-start checklist must be completed on all earthworks.
- Earthwork Permit completed to manage the specific risks and control measures of the earthwork.
- Any excavation greater than 1.5 m must be appropriately benched, battered, or shored.
- The person directly controlling the work activities must confirm all equipment being used is in a safe and service condition.

3.3 Planning & Preparation

Good planning is essential to ensuring a safe and efficient work process can be applied. Thus, the following requirements must be applied in sequence.

- 1) The scope of works for the area to be excavated needs to be clearly identified.
- 2) The area needs to be assessed to verify the presence and proximity of underground services by completing the following:
 - Consultation with Banana Shire to confirm records of existing assets locations.
 - Physically inspect the site of works area to confirm locations and details of existing underground assets.
 - Arrange for service locations to be detected and marked as required through an accredited provider.
- 3) Once the details of underground services have been confirmed, then the required method for undertaking the earthworks must be determined and approved by the Principal.

A standard assets colour code guide is provided for reference. This is provided as a guide only – It is possible that existing assets do not follow the standard colour coding convention.

Service	Tape colour	Service	Tape colour	Service	Tape colour
Gas	Yellow	Storm Water	Green	Reclaimed Water	Purple
Water	Blue	Sewerage	Red	Electricity	Orange
Communications	White	Unknown	Pink		

Figure 2 – Standard Assets Colour Code Guide

3.4 General Site Earthworks

Provide temporary surface drainage at the sites as part of the earthworks to ensure the site remains free draining.

Where permitted by the Principal, areas for onsite placement of excess cut material are to be determined in consultation with the Superintendent. Provide detailed survey data for use in the calculation of quantities for all site earthworks as applicable.

Access for all vehicles or machinery to the property is to be via existing access roads only, unless approved otherwise by the Superintendent.

3.5 Limits of Excavation

Keep the extent of excavation to the minimum possible to allow efficient construction of the works. Keep pipe trench widths within the maximum widths recommended by the pipe manufacturer.

Keep the sides of excavations vertical to at least 150mm above the pipe.

Make sure that minimum cover requirements are to be satisfied following any earthwork which may occur around the pipeline. This is particularly relevant where earthworks are to be expected to form roads, driveways, footpaths and for general shaping of the surface.

4. Area Specific Work

4.1 Protection of Earthwork

- The execution of the task must ensure all agreed risk controls are established, maintained, and managed by the earthwork permit. In the event changes arise in the scope of work then the job must stop and be re-assessed against each requirement in the previous steps.
- The Contractor's responsibility for care of the works shall include the protection of earthwork in accordance with the approved Erosion and Sediment Control Plan.
- The Contractor shall install effective Erosion and Sedimentation Control measures, prior to connecting earthworks, and shall maintain these control measures as required.
- Adequate drainage of all working areas shall be maintained throughout the period of construction to ensure surface water runs off without ponding, except where ponding forms part of a planned erosion and sedimentation control system.
- When rain is likely or when work is not proposed to continue in a working area on the following day, precautions shall be taken to minimize ingress of any excess water into earthworks material. Ripped material remaining in cutting and material placed on embankments shall be sealed off by adequate compaction to provide a smooth tight surface.

4.1.1 Clearing and Grubbing

- Undertake clearing and grubbing of the works area to remove:
 - Trees, shrubs, and overhanging branches (living and dead).
 - Trees stump and roots to a depth not less than 300 mm below ground surface.
 - Rocks, rubbish, and other artificial obstructions from the ground surface.
 - Abandoned services to a depth not less than 300 mm below ground surface.
 - Old foundations, buildings and structures.
 - Minor made structures.

4.1.2 Topsoil Operations

- Stripping of topsoil shall be in accordance with AS 3798 Section 6.1.5.
- Removal of topsoil shall only commence after erosion and sedimentation controls have been implemented and when clearing, grubbing and disposal of materials have been completed on that section of the works.
- Topsoil throughout the extent of the work shall be removed and stockpiled separately clear of the work area with care taken to avoid contamination by other materials.
- Topsoil material stripped from the site shall be stockpiled for later re-use on site as required.
- To minimize erosion, stockpiles are to be protected by effective use of erosion and sediment control devices.

4.2 Vegetation Clearing

Obtain approval from the Banana Shire Council prior to commencement of all vegetation clearing works.

Do not destroy, remove, or clear vegetation/trees or surface improvements to an extent greater than necessary for the execution of works.

Where approval has been provided by the Banana Shire Council, clear the site of trees, stumps, and scrub.

Dispose of all rubbish and surplus material offsite at approved sites. Where appropriate, vegetation matter is to be mulched and stockpiled onsite for later use on site as required.

4.3 Plant and Equipment

The Contractor with management or control of plant at a workplace should:

- Take all reasonable steps to ensure the plant is only used for the purpose for which it is designed unless the Contractor has assessed that the proposed use does not increase the risk to health and safety.
- In determining whether the proposed use of a plant increases the risk to health and safety, ensure that the risk associated with the proposed use is assessed by a competent person.
- Take all reasonable steps to ensure that all safety features, warning devices, guarding, operational control, emergency stops are used in accordance with instructions and information provided by the Contractor.

4.4 Excavation

All excavations over 1.5 meters in depth must be shored and regularly inspected to ensure issues that may impact on workers or surrounding assets are identified.

- Where an excavation or trench is open for longer than 24 hours an inspection must be completed each day before the start of work.
- Inspection should be undertaken as often as necessary due to changes in soil type and condition.

4.5 Embankment Construction

Embankment construction includes all operations associated with the preparation of the foundation areas on which fill material is to be placed.

- The material shall be free of tree stumps and roots and shall be capable of being compacted in accordance with this specification.
- Foundations for embankments shall be prepared for embankment construction after removing topsoil and unsuitable material, by loosening the material exposed to a depth of 200mm, adjusting the moisture content of the loosened material and compacting.
- In placing embankment layers, the Contractor shall use equipment and techniques to avoid surface heaving or other damage to the foundations and underlying embankment layers.
- The methods of excavation, transport, depositing and spreading of the fill material shall be selected to ensure that the placed material is uniformly mixed.
- Fill material for embankment construction shall be placed in conforming horizontal layers and compacted.

4.6 Minimum Compaction and Density Testing

Compaction for engineered fill areas to be in accordance with AS 3798. The minimum requirement for frequency of testing is to be as per AS 3798 Table 8.1 being for Type 1 for engineered fill and Type 4 for engineered fill behind structures.

Undertake testing of fill compaction and/or density in accordance with AS 1289 Part 5. Testing is to be performed by an independent Geotechnical Testing Authority (GTA). Record all test performed, including location details and results for each in-situ test and submit to Superintendent within five days of site testing.

4.7 Flotation of Structures

Make sure that any partly or fully completed structures do not move due to hydrostatic pressures during or after construction. Principal designed structures have been designed to resist movement due to hydrostatic pressures.

During the construction of structures, ensure that any partly or fully completed structures do not move due to hydrostatic pressures. Free drainage is to be maintained to the work area surrounding any in ground structure during construction.

4.8 Drainage and De-watering

High groundwater level could be encountered at the site.

Keep all excavation free of water. Provide, maintain, and operate intercepting works to prevent surface water from entering the excavations.

Provide all equipment necessary for dewatering the excavation and keeping the Works free from water. In critical areas where failure of the system could lead to danger to life or damage to partially complete or existing assets, complete standby equipment must be provided.

Only lower the water table by well points or other external dewatering methods of no damage is likely to be caused to adjacent structures and services or the environment.

Ensure that all downstream works that are under construction, completed or in use are always protected against the effects of any drainage that is discharged or likely to be discharged from the works.

5. Reference Documents

5.1 Australian and Industry Standards

Specification has been undertaken in accordance with the relevant standards listed in Table 2.

Table 2 – Australian and Industry Standards

Document Number	Description
-	WSA 02-2014 Gravity Sewer Code of Australia Version 3.1
-	WSA 03-2011 Water Supply Code of Australia Version 3.1
-	Australian Guidelines for Water Recycling
-	NSW Guidelines for Recycled Water Management Systems
-	CMDG C213 - Earthworks Ver 2 July 2018 (PH)
AS 1657	Fixed Platforms, Walkways, Stairways and Ladders
AS 1726	Geotechnical Site Investigations
AS 2566	Buried Flexible Pipelines
AS 3600	Concrete Structures
AS 3798	Guidelines on Earthworks for Commercial and Residential Developments
AS 4041	Pressure Piping
AS 4678	Earth Retaining Structures
CMDG C213	Earthworks

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Taroom Sewage Treatment Plant



Technical Specification: Demolition Works

Doc N°: 2766-SPC-CIV-0002

Rev 0

2 May 2023



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Revision	Date	Description	Author	Reviewed	Approved
Rev 0	2/05/2023	Technical Specification: Demolition	A. Chilito	F. Wecker	T.Nel

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1. Glossary of Terms

Abbreviations

AS	Australian Standard
BSC	Banana Shire Council
EIC	Electrical, Instrumentation & Controls
GANDEN	GANDEN Engineers and Project Managers
PPR	Principal Project Requirements
STP	Sewage Treatment Plant
VSD	Variable Speed Drive
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant
WSA	Water Services Association (Australia)
NZS	New Zealand Standard
ISO	International Standard Organization
NATA	National Association of Testing Authorities
GTA	Geotechnical Testing Authority

2. Introduction

This specification details the requirements for demolition of existing equipment and structures within the Sewage Treatment Plant at Taroom.

For project appreciation and summary of proposed demolition works, refer 2766-REP-0001 Basis of Design Report.

3. Demolition General Requirements

3.1 Area of Works Description

The work area comprises the removal of a Tricking Filter, an existing 1050 mm Pit North of M&E shed, and an existing 1050 mm Scour Pit within the Northern Swale.

The existing Filter is approximately 14.5m diameter, 2 meters tall from structure floor to the top of the walls, with an approximately 250mm thick base. Record drawings for existing assets have been provided in Appendix A.

Refer to the design drawings for details of new proposed works.

3.2 Site Conditions

The works are located within an operational sewage treatment. The existing trickling filter and pits need to be removed to construct the new access road, as identified within the design drawings. All elements mentioned have been contaminated by raw sewage and are to be disposed of by the Contractor at an approved facility. The Contractor is responsible for the cost of all material disposal.

3.2.1 Site Climatic Conditions

The Taroom Sewage Treatment Plant (STP). Typical atmospheric conditions listed in Table 1 below:

Table 1 – Site Climatic Conditions

Parameter	Value
Altitude	202m above sea level
Barometric Pressure	101.861 Kpa (average)
Ambient Temperature	min 7°C, max 34 °C
Relative Humidity	46-84%
Exposure	Direct to Ultraviolet radiation
Wind Region	A4, AS 1170.2

3.3 Access Management

The Contractor is responsible management of the demolition site for the duration of works. This includes site fencing, management of access to the area of works and the safe storage of any machinery and materials associated with the works. As the demolition is within the boundary of the working sewage treatment plant, access for works and machinery will be coordinated with Banana Shire.

3.4 Electricity Management

The Contractor needs to provide a specific control measure. Those measures must be implemented when work is done near power lines. The local electricity supply authority needs to be consulted before demolition commences. Thus, all live electrical wiring and elements should be disconnected, isolated from the main switch, and marked and rendered safe by the Councils' engineer or site supervisor.

More detailed measures or managing risk associated with electricity shall be provided for the Contractor.

3.5 Control of Traffic

The Contractor must follow the requirements set out within CMDG Specification C201 – Control of Traffic.

4. Area Specific Works

4.1 General Tidiness

The contractor must clean and clear away stockpiles along the Eastern fence-line where the proposed swale will run.

Banana Shire Council shall provide details of items which are to be retained in a different location on site. All other items are to be disposed at the nearest Waste and Recycling Centre (tip).



Figure 1 – Stockpiles to Clean – Camera looking East



Figure 2 – Stockpiles to Clean – Camera looking North

4.2 Trickling Filter

The construction of the new access road requires the demolition of the redundant biological trickling filter. The trickling filter is approximately 14.5m diameter and 2 meters tall. Record drawings for existing assets have been provided in Appendix A.

Banana Shire Council shall provide details of any components within the redundant trickling filter that shall be retained. This may include:

- Bringing concrete to a nearby crushing plant to recycle concrete, and
- Reusing filter media.



Figure 3 – Taroom STP Site (prior to the recent upgrade works)

The following demolition works are required for the structure:

1. Inspect existing structure.
2. Remove any stored water and/or sewage.
3. Remove any remaining mechanisms or loose material from inside the structures.
4. Dismantle and remove sprinkler, microbial slime layer, stone media, cable trays and pipework forming part of the structure.
5. Remove reinforced concrete walls (which are approximately 2 meters tall from the structure floor to the top of the walls), reinforced concrete base (which is approximately 250 mm thick), and perimeter launder either by cutting into small pieces for transport and disposal, or crushing on site.
6. Fill the void above the stabilized sand to surrounding ground level with compacted FCR.

The Biological Trickling Filter is shown in Figure 4 below.



Figure 4 – Biological Tricking Filter

4.3 Tricking Filter Access Structure

The following demolition works are required for the Tricking Filter access structure:

1. Dismantle and remove all steelwork associated with access structure.
2. Remove the concrete landing / foundation.

The Tricking Filter access structure is shown in Figure 4.



Figure 5 – Tricking Filter Access Structure

4.4 Tricking Filter Pipework

4.4.1 Inlet Pipe



Figure 6 – Tricking Filter Inlet Pipe

All upstream and downstream pipework connecting to the trickling filter is to be decommissioned. It is likely that the pipes are contaminated, therefore prior to the removal of pipework, all pipes are to be scoured/purged.

The upstream pipework is to be removed up to the existing Imhoff tank, capped, and abandoned. Details of this pipework can be found within the record drawings in Appendix A. Removal is required for this pipeline as it currently conflicts with the proposed vehicle access road.

Downstream pipework leading to clarifier is to be left in the ground, grout-filled and capped at the trickling filter outlet.

4.4.2 A-Recycle Pipework

The contractor is to decommission, purge and remove the existing buried A-Recycle pipework that requires removal in order to construct the new access road. This pipework is to be removed up to the crest of the batter, capped and abandoned. The trench is to be backfilled with approved material.

Removal of the pit is described in the section below.

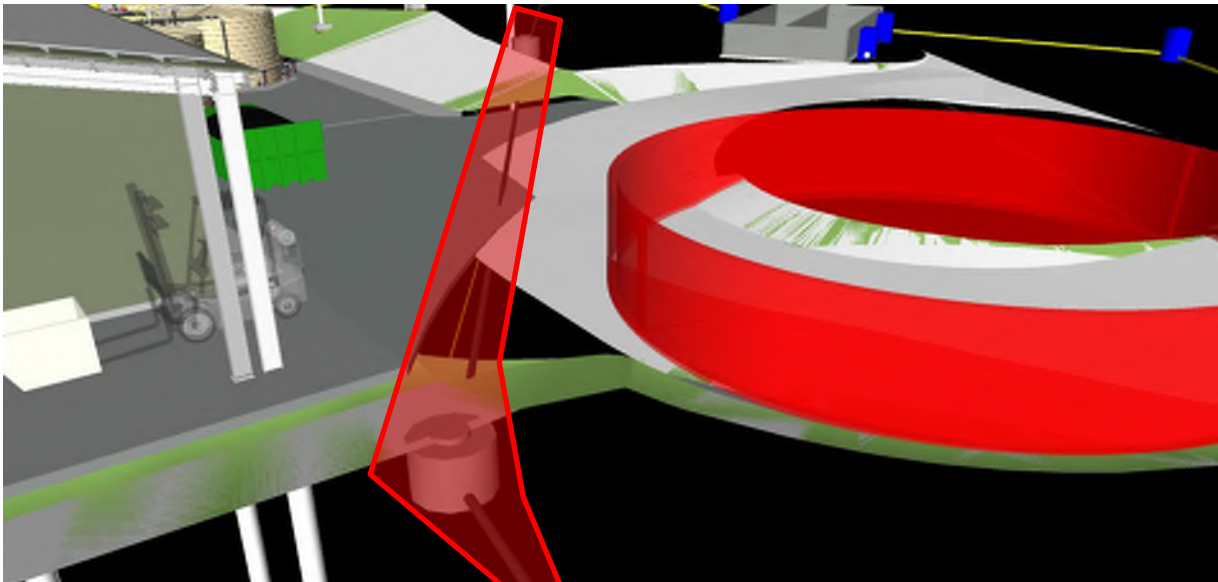


Figure 7 – A-Recycle Pipework to be Removed.

4.5 1050m Diameter Pits

This section of the specification describes the proposed works associated with the two 1050 diameter pits. It is not known whether these pits are of pre-cast or cast in-situ construction.

4.5.1 North of M&E Shed

The existing, redundant 1050 diameter pit formed part of the original plant design and currently sits within the proposed swale. The contractor is to remove and dispose of the cover slab, break out the pit walls minimum one (1) meter below the surface level, backfilled with approved material, and compacted to 95% compaction to the finished surface level(s) identified in the design drawing set.



Figure 7 – 1050 dia. pit located North of M&E Shed.

4.5.2 North-Eastern Scour Pit

A new scour pit was installed as part of the 2021 upgrade; however this was installed in the location of the proposed stormwater drainage swale. The contractor must remove or relocate this pit and install it within the location shown within the design drawing set.

Refer CMDG standard drawing CMDG-S-073 (Scour Valve 100dia Construction Details) for more information.



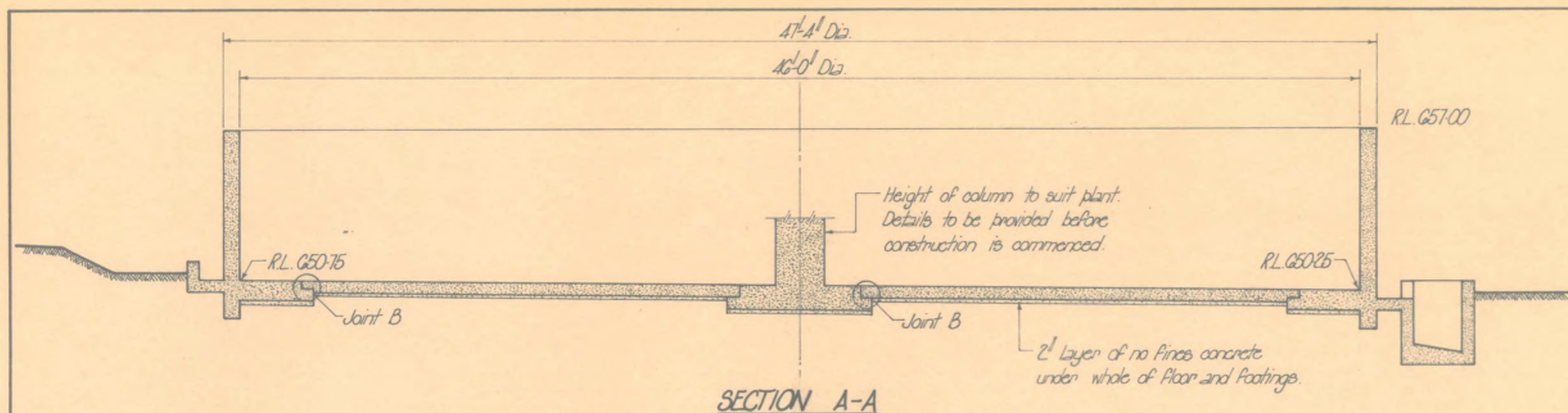
Figure 8 – 1050mm dia. scour pit within proposed swale.

4.6 Removal of Debris

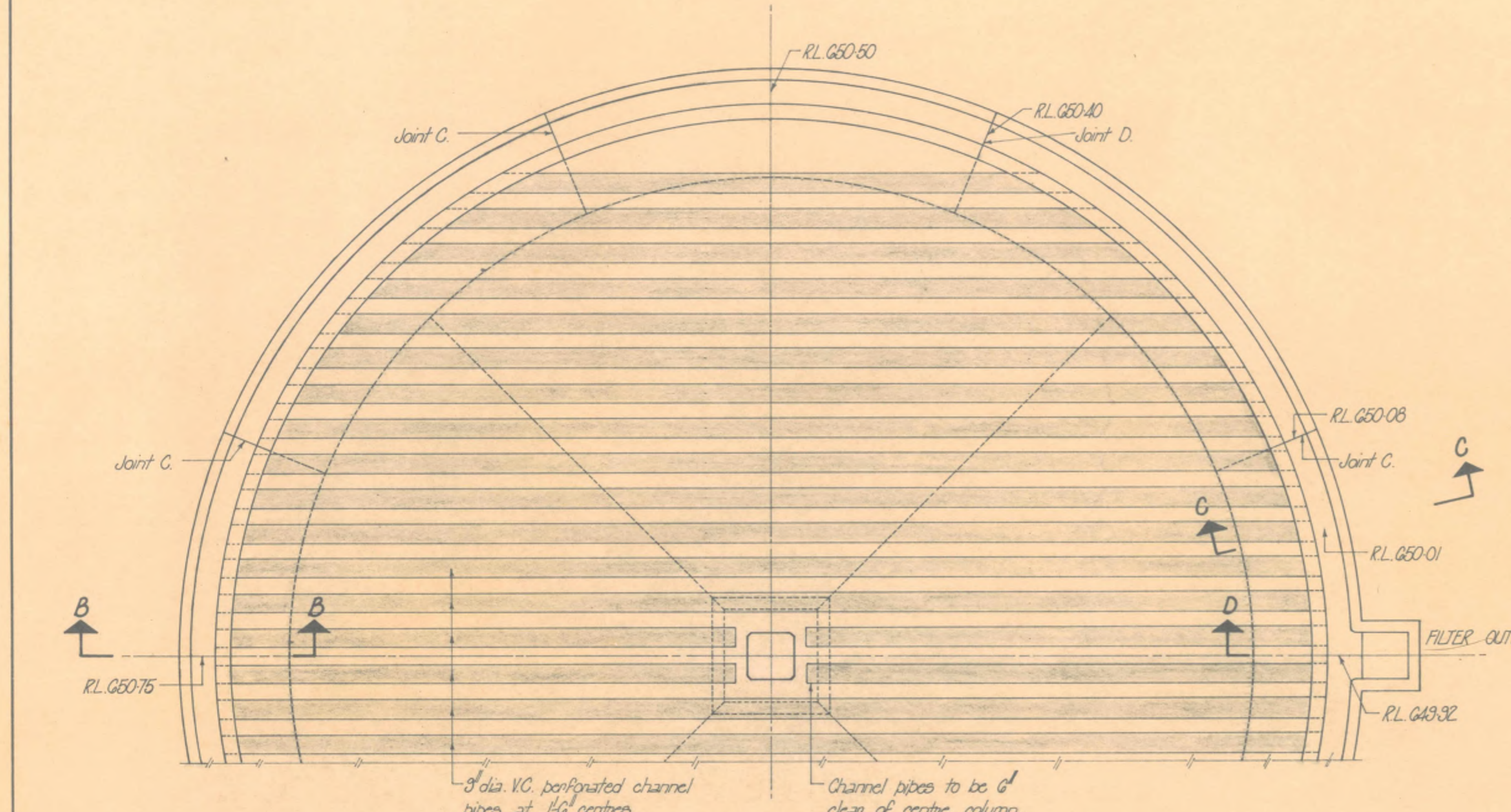
The Contractor must move and dispose of demolition materials and waste from the workplace. Debris shall be progressively removed to prevent build-up that could affect workplace entry and exit or cause a health and safety hazard.

All demolished material which is temporarily stockpiled on site for subsequent disposal, must be safely stockpiled in a fenced exclusion zone.

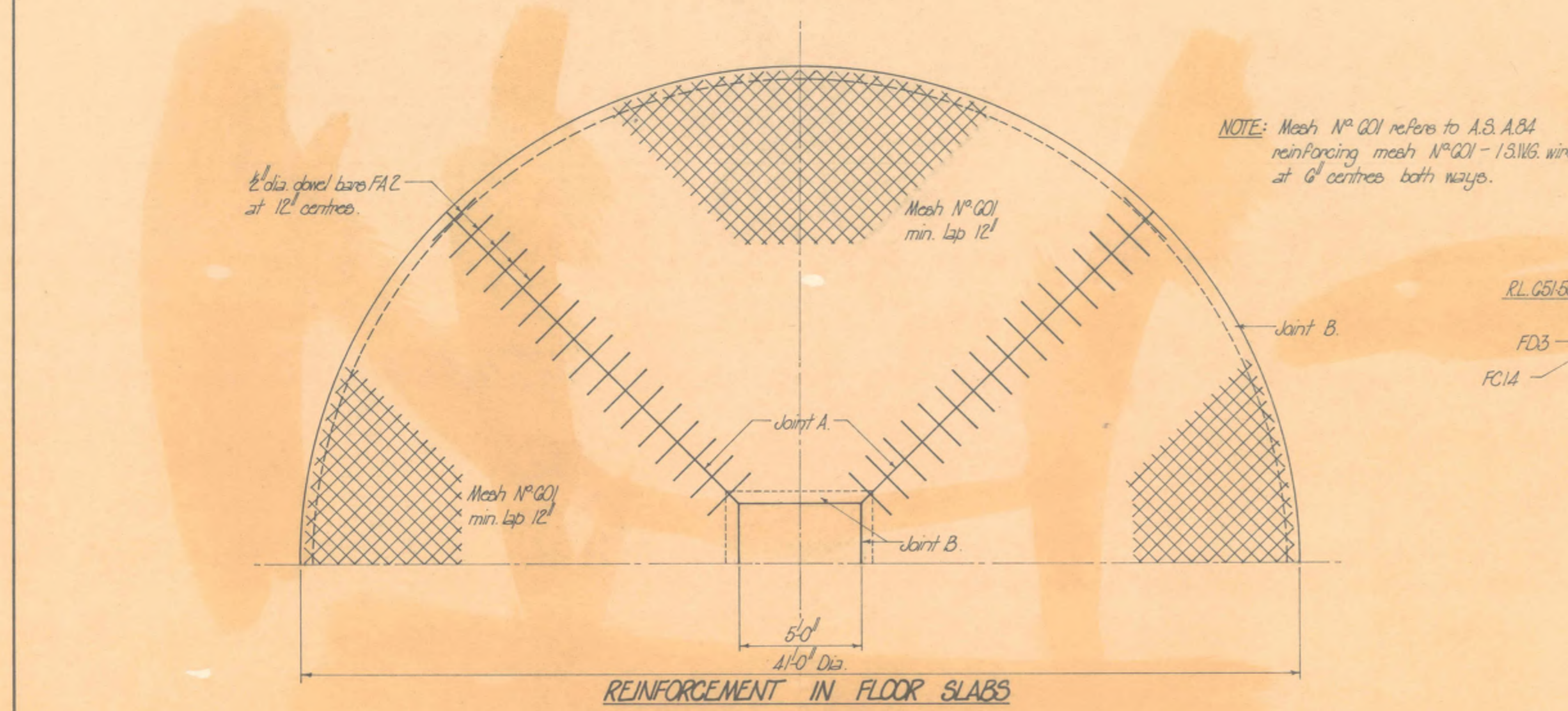
Appendix A Record Drawings



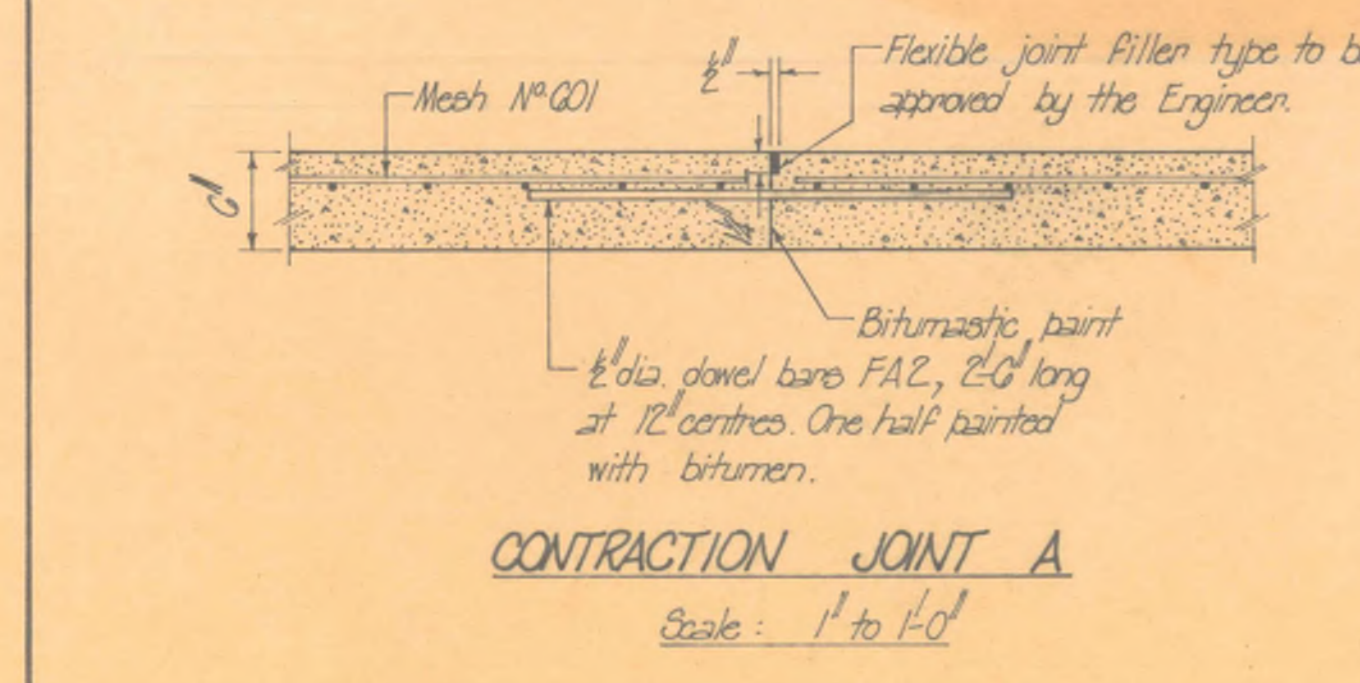
SECTION A-A



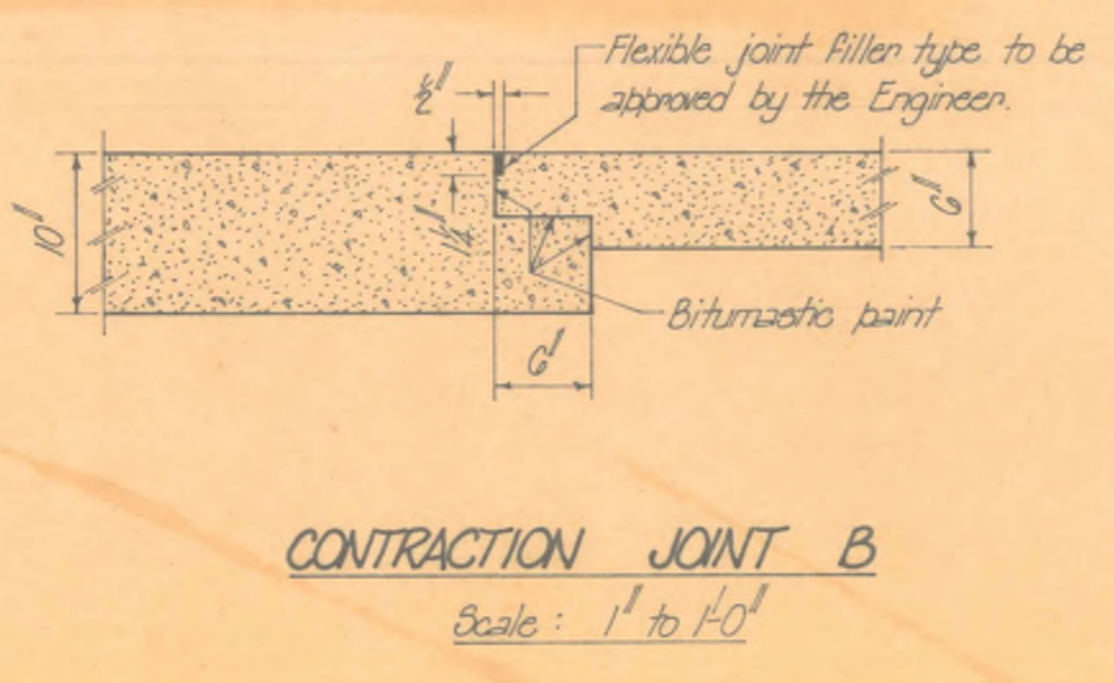
PART PLAN



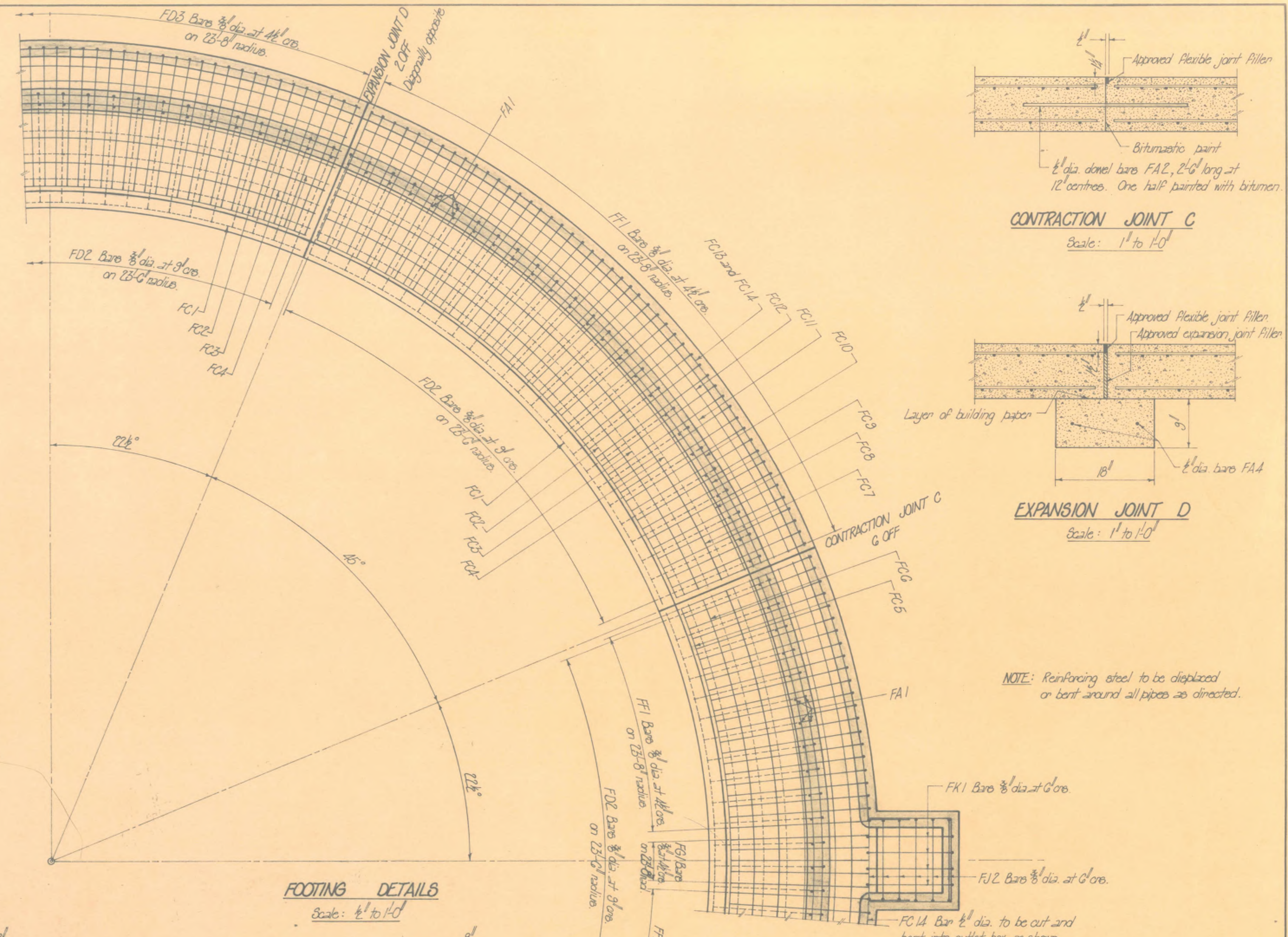
REINFORCEMENT IN FLOOR SLABS



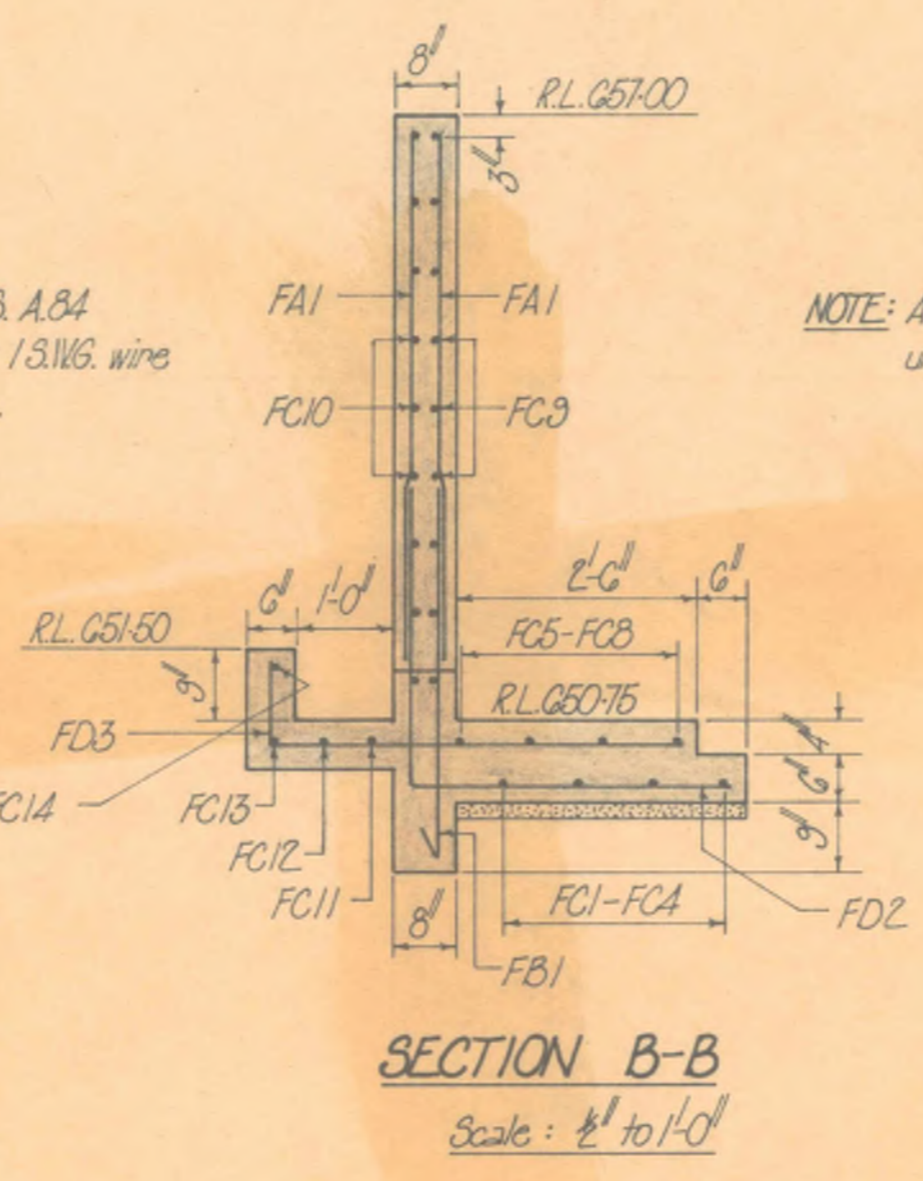
CONTRACTION JOINT A
Scale: 1" to 1'-0"



CONTRACTION JOINT B
Scale: 1" to 1'-0"



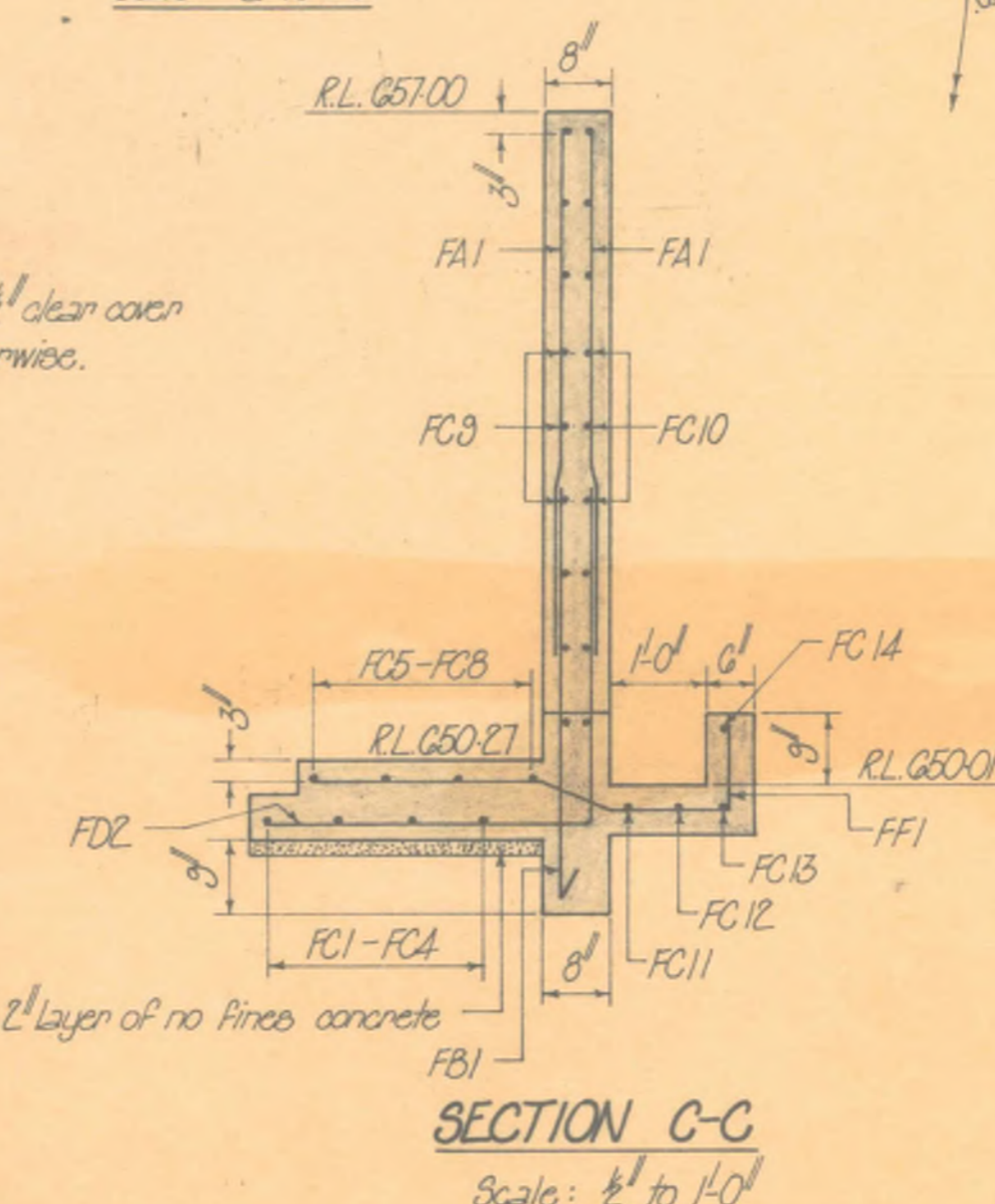
FOOTING DETAILS
Scale: 1/2" to 1'-0"



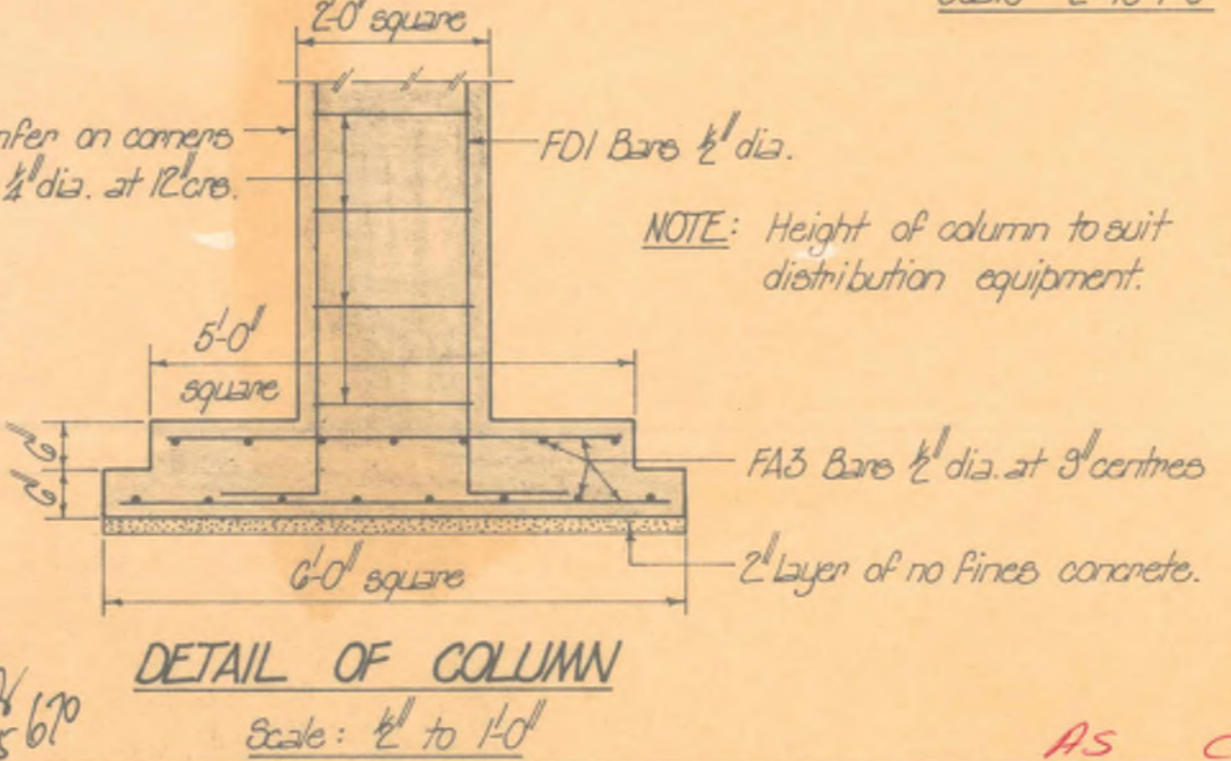
SECTION B-B
Scale: 1/2" to 1'-0"

NOTE: Mesh No. 20 refers to A.S. A.84 reinforcing mesh No. 20 - 13.1165 wire at 6" centres both ways.

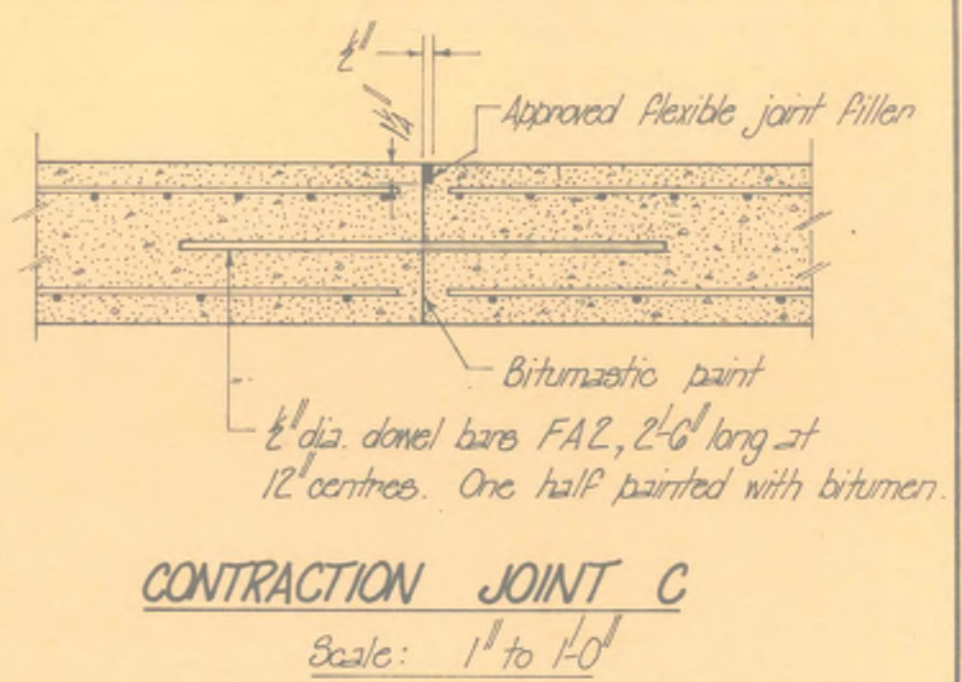
NOTE: All bars to have 1/2" clear cover unless shown otherwise.



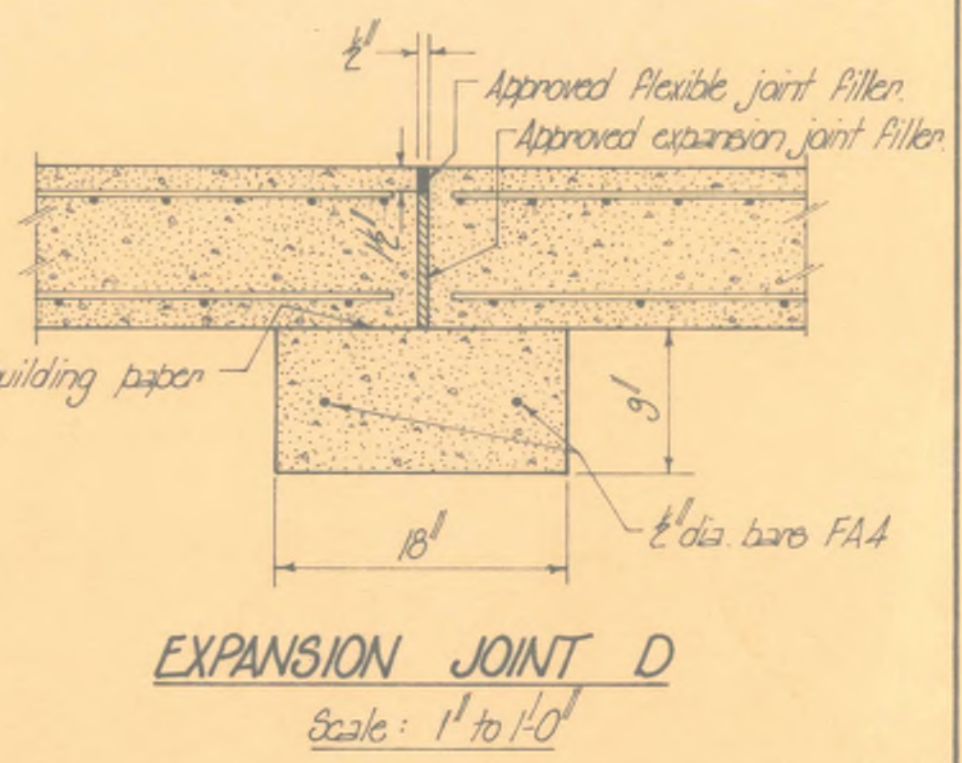
SECTION C-C
Scale: 1/2" to 1'-0"



DETAIL OF COLUMN
Scale: 1/2" to 1'-0"

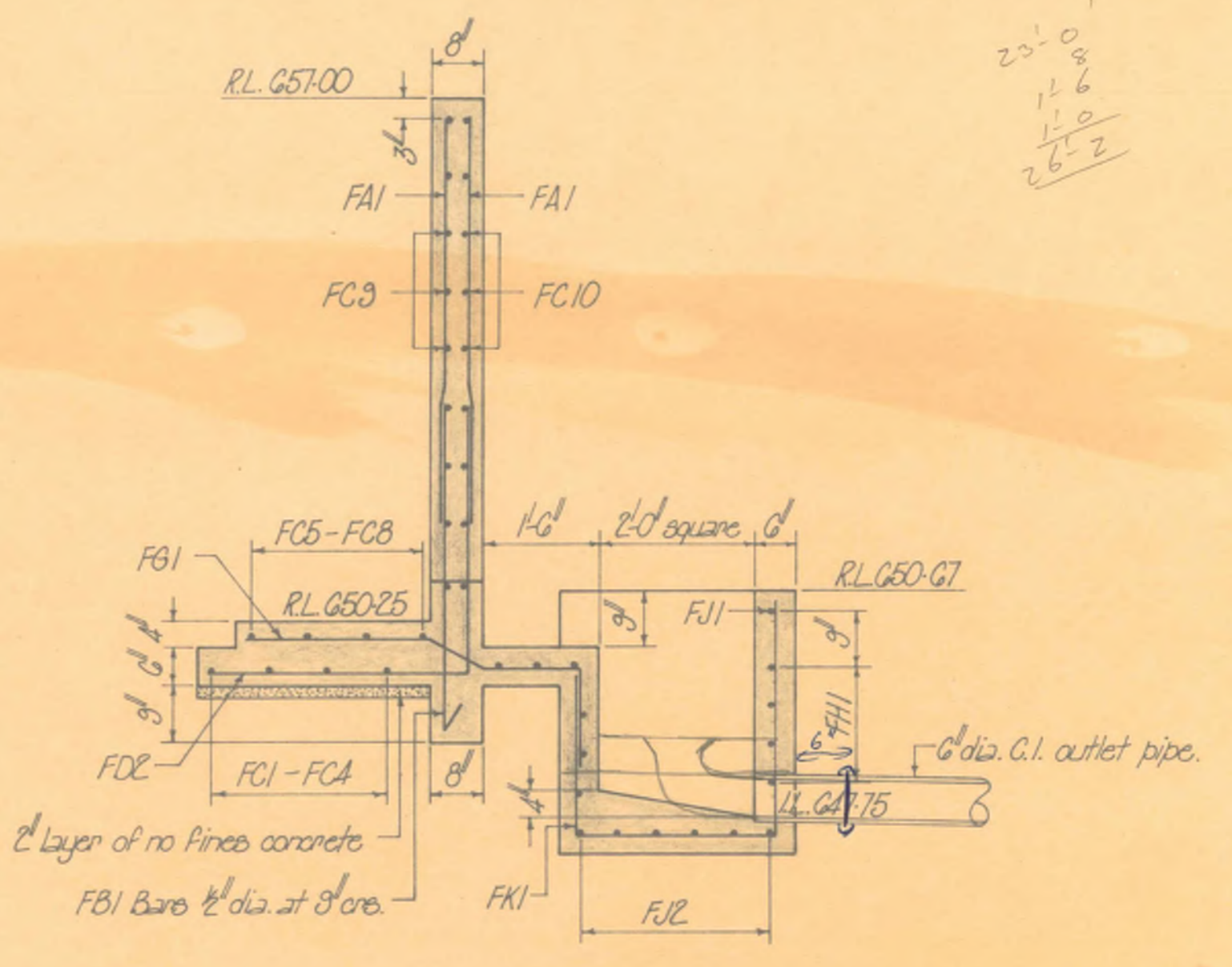


CONTRACTION JOINT C
Scale: 1" to 1'-0"



EXPANSION JOINT D
Scale: 1" to 1'-0"

NOTE: Reinforcing steel to be displaced or bent around all pipes as directed.



SECTION D-D
Scale: 1/2" to 1'-0"

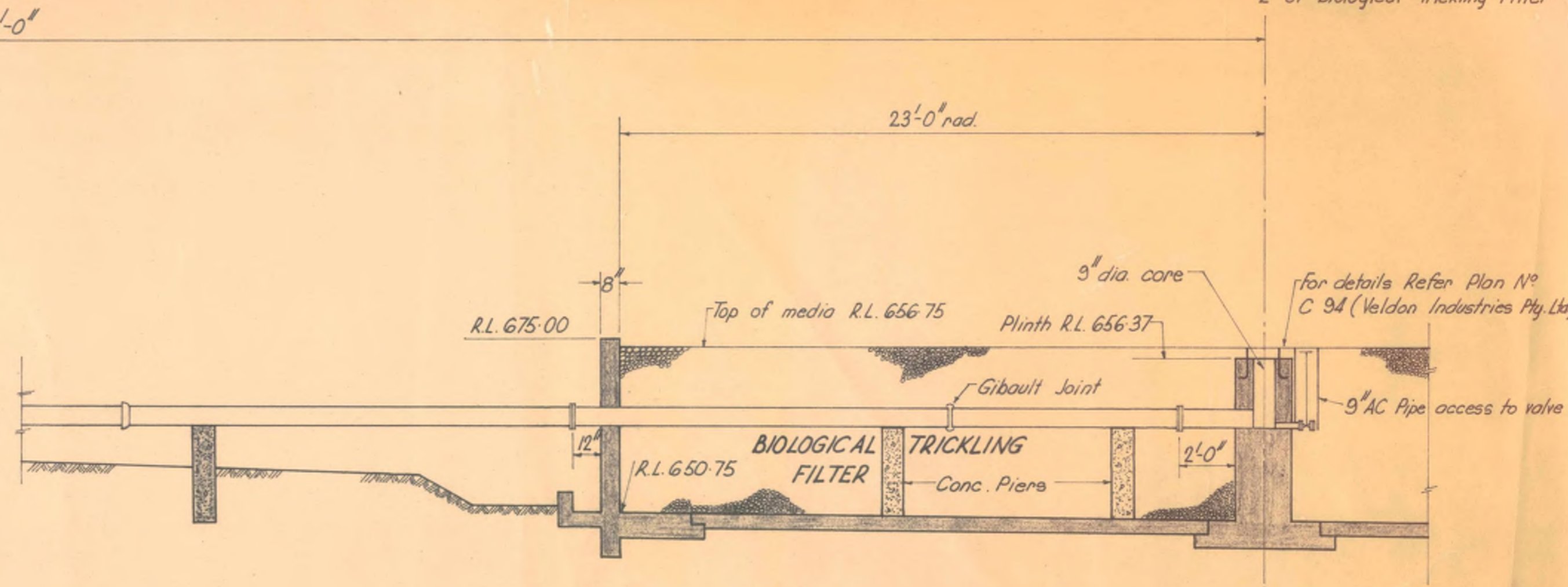
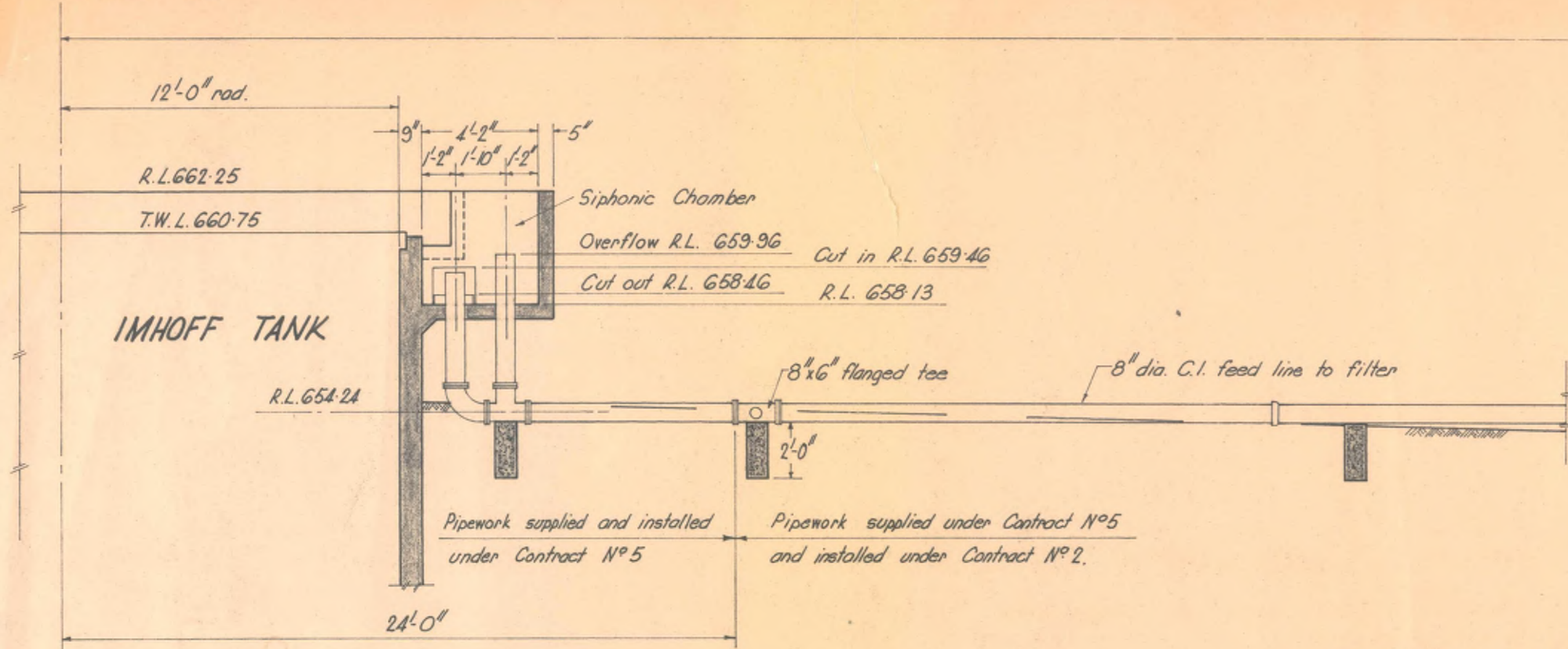
REVISIONS		SCALE: 1/2" to 1'-0" and as shown	TARDOM SHIRE COUNCIL	70-52
A		DRAWN P.S.A.	TARDOM SEWERAGE SCHEME	
B		CHECKED V.M.P. - 16/70	BIOLOGICAL TRICKLING FILTER	
C		PASSED		
D				
E				

G. M. CALDER
CONSULTING ENGINEER
CHINCHILLA

AS CONSTRUCTED

± of Imhoff Tank.

± of Biological Trickling Filter

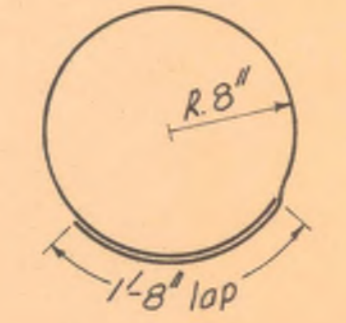
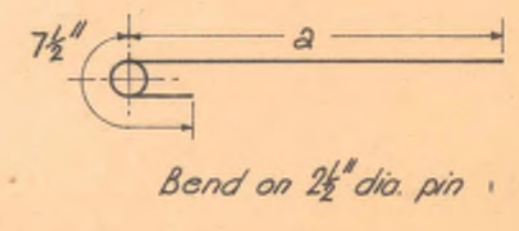
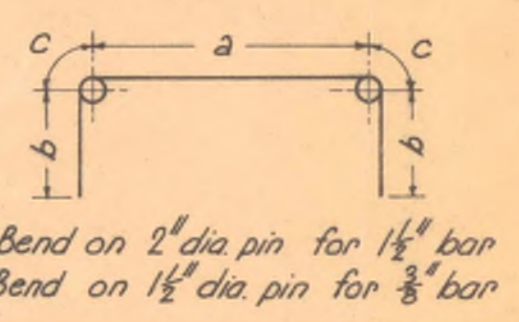
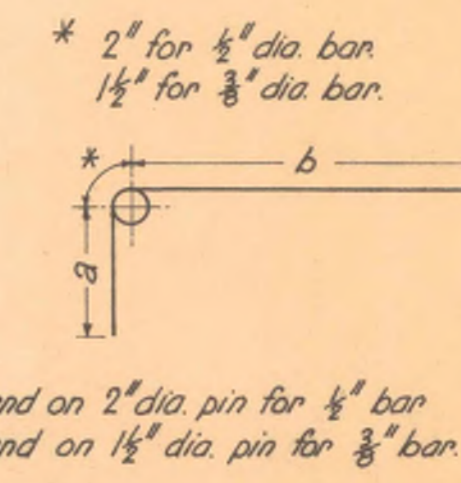


SECTION ELEVATION

Scale: 1/2" to 1'-0"

STEEL LIST

BAR	DIA	SPACING	LENGTH	TOTAL NO	TOTAL LENGTH	BENDING DIAGRAM			POSITION	
						a	b	c		
T.D.1	1/2"	4"	7'-4"	1	8	2'-4"	4'-10"		Floor of chamber	
T.D.2	"	"	"	2	15	2'-4"	4'-10"		" " "	
T.D.3	"	"	"	2	15	2'-4"	4'-10"		" " "	
T.D.4	"	"	7'-4 1/2"	2	15	2'-4"	4'-10 1/2"		" " "	
T.D.5	"	"	7'-5"	2	15	2'-4"	4'-11"		" " "	
T.D.6	"	"	7'-5 1/2"	2	15	2'-4"	4'-11 1/2"		" " "	
T.D.7	"	"	7'-6"	2	15	2'-4"	5'-0"		" " "	
T.D.8	"	"	7'-7"	2	16	2'-4"	5'-1"		" " "	
T.D.9	"	"	7'-7 1/2"	2	16	2'-4"	5'-1 1/2"		" " "	
T.D.10	"	"	7'-8 1/2"	2	16	2'-4"	5'-2 1/2"		" " "	
T.D.11	"	"	7'-9 1/2"	2	16	2'-4"	5'-3 1/2"		" " "	
T.D.12	"	"	7'-11"	2	16	2'-4"	5'-5"		" " "	
T.D.13	"	"	4'-11"	12	59	1'-9"	3'-0"		Wall of chamber	
T.D.14	3/8"	"	5'-6"	23	127	1'-3"	4'-1 1/2"		" " "	
T.E.1	1/2"	8"	10'-11"	7	77	7'-3"	1'-8"	2"	Walls of chamber	
T.E.2	3/8"	4"	15'-8 3/4"	10	158	7'-3 3/4"	4'-1"	1 1/2"	Walls & floor of chamber	
T.E.3	"	4"	11'-10 1/2"	4	48	7'-3 3/4"	2'-1 3/4"	1 1/2"	" " "	
T.A.1	5/8"	4" & 8"	5'-0"	16	80				Inner face Imhoff Tank.	
T.B.1	1/2"	4"	6'-0"	14	84	5'-4 1/2"			Walls of chamber	
T.C.1	1/2"		5'-11"	2	12				Floor of chamber	
SUMMARY:						DIA	LENGTH	WEIGHT (LBS)		
						3/8"	333	125		
						1/2"	410	274		
						5/8"	80	84		
						TOTAL WEIGHT	483 LBS	=0.216 TONS		



- Notes:
- Minimum lap for reinforcing steel:
1'-3" lap for 3/8" dia bar
1'-8" lap for 1/2" dia bar
2'-1" lap for 5/8" dia bar.
 - Reinforcement to be placed centrally in walls and floor of chamber.
 - For details of pipework in siphonic chamber refer Dwg. No B.188 (Veldon Industries Pty. Ltd.)

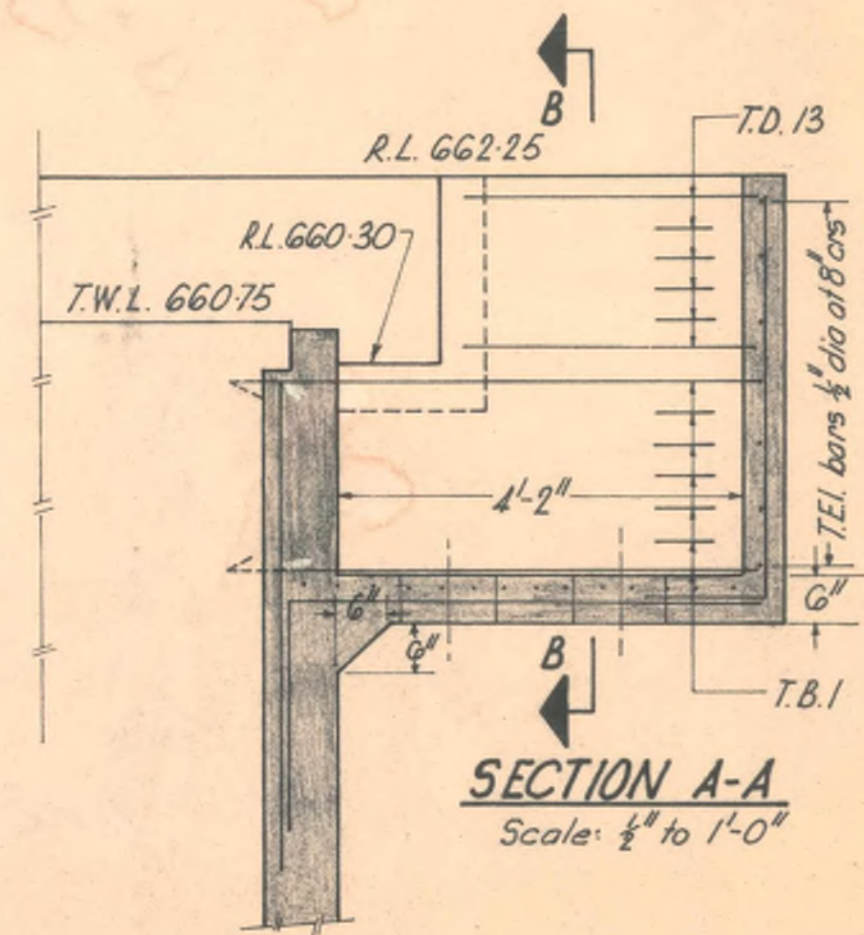
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CONSULTING ENGINEER
CHINCHILLA

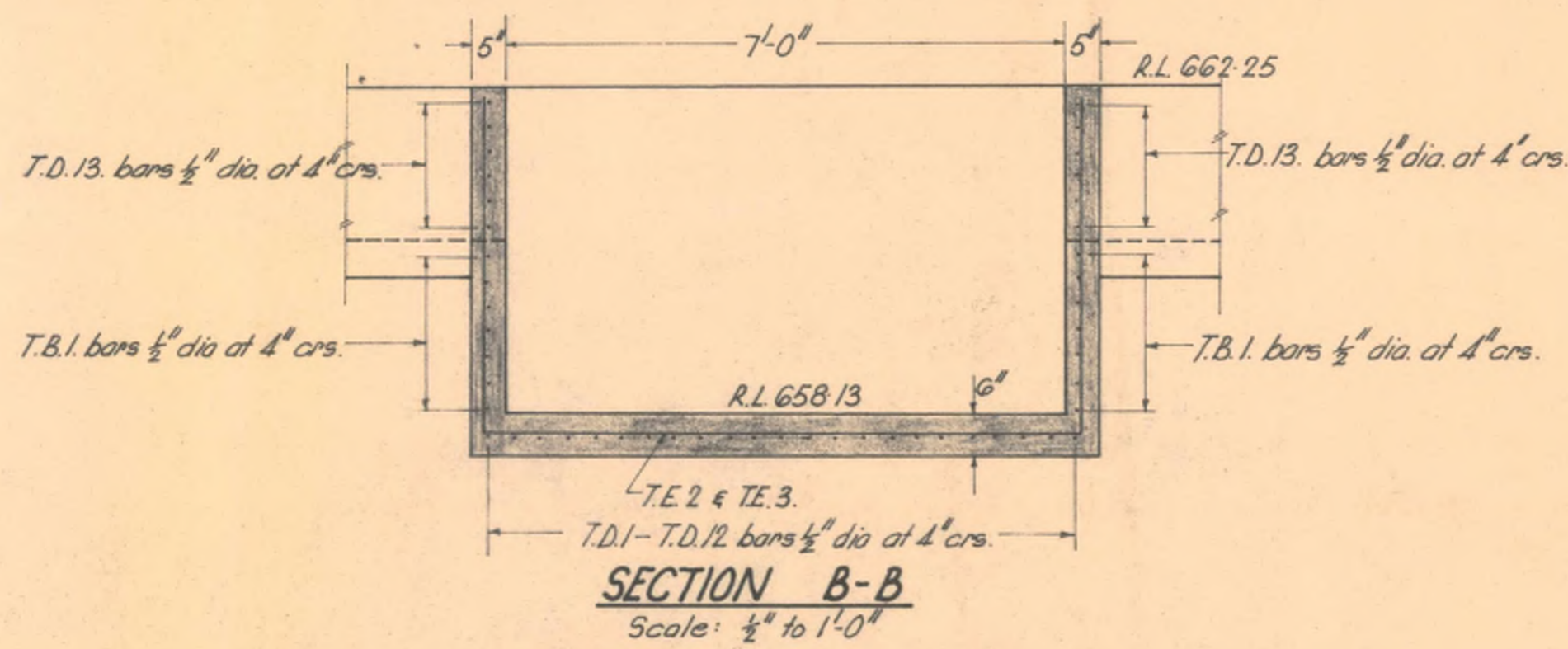
TAROOM SHIRE COUNCIL
TAROOM SEWERAGE SCHEME
SIPHONIC CHAMBER DETAILS

72.02



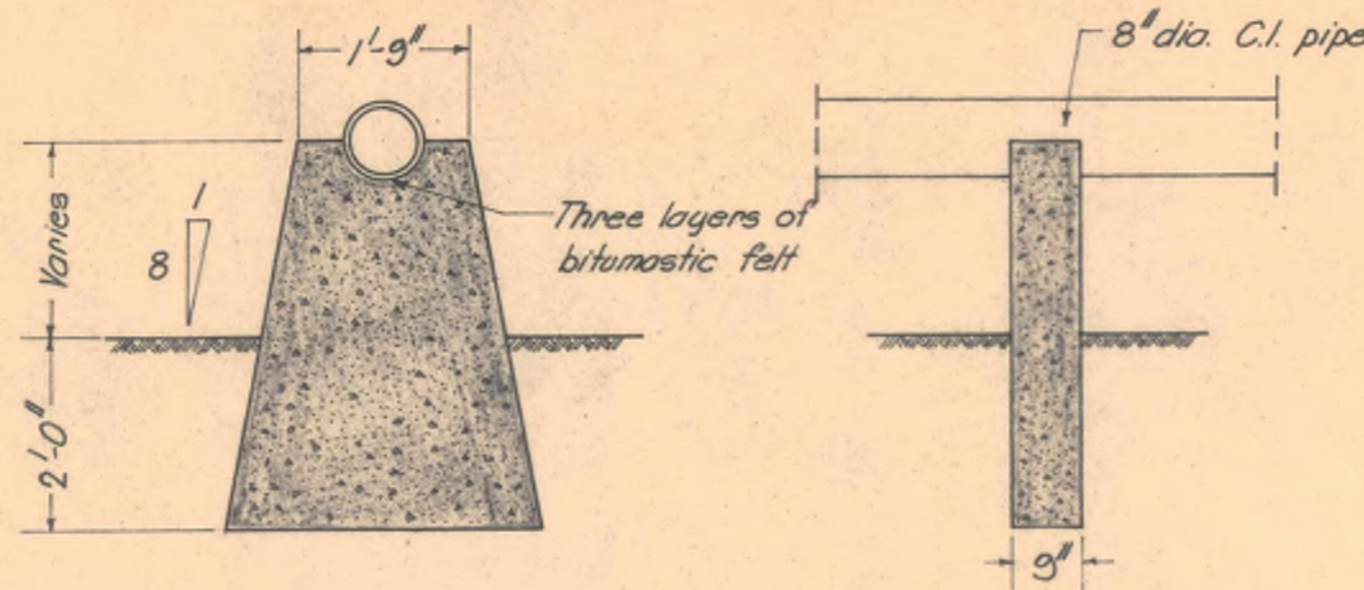
SECTION A-A

Scale: 1/2" to 1'-0"



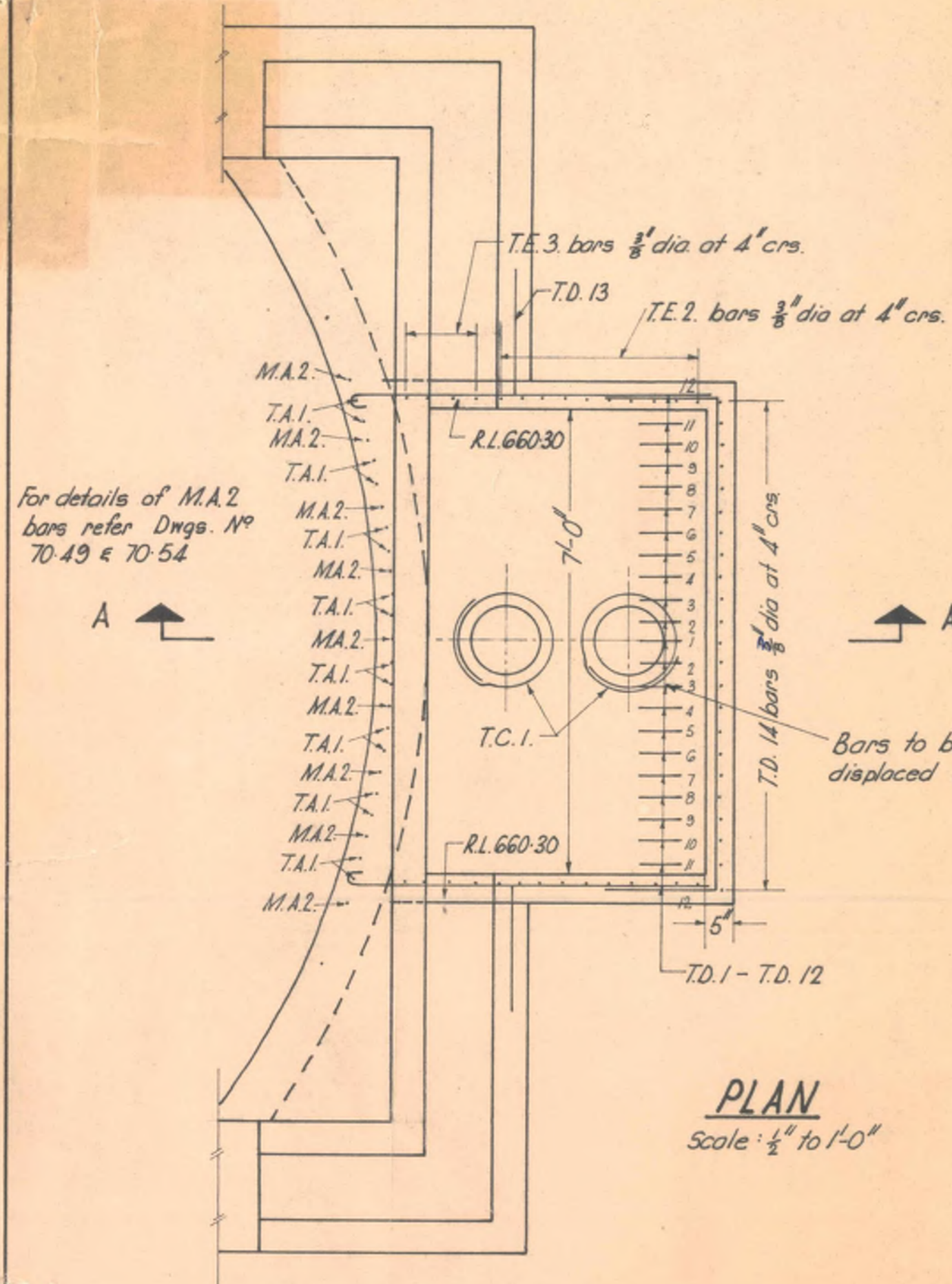
SECTION B-B

Scale: 1/2" to 1'-0"



DETAILS OF PIPE SUPPORT PIERS

Scale: 1/2" to 1'-0"



PLAN

Scale: 1/2" to 1'-0"

IMHOFF TANK						BENDING DIAGRAM		POSITION	
BAR	DIA	SPACING	LENGTH	TOTAL NO.	TOTAL LENGTH				
MA.1	1/2"	12"	16'-10"	78	1235			Outer face - vert. wall	
MA.2	"	"	16'-3"	77	1262			Inner face "	
MA.3	"	"	12'-9"	15	186			Lower face hopper	
MA.4	"	"	12'-9"	15	186			Upper face "	
MA.5	"	"	8'-9"	26	228			Lower face "	
MA.6	"	"	8'-9"	26	228			Upper face "	
MA.7	"	"	Varico	8	16			Base of tank	
MA.8	3/8"	"	3'-0"	4	36			Beams	
MB.1	1/2"	12"	10'-4 1/2"	77	737	a	b		Inner face junction of vertical wall and hopper
MB.2	1/2"	12"	10'-2"	77	784	a	b		
MC.1	1/2"	"	76'-7"	23	2415	No. OF LAPS			Outer hoop bars - vertical wall Inner hoop bars - vertical wall Outer hoop bars - hopper
MC.2	"	"	78'-11"	23	2482	R			
MC.3	"	"	77'-0"	1	85	4			
MC.4	"	"	75'-9"	1	83	4			
MC.5	"	"	75'-11 1/2"	1	85	4			
MC.6	"	"	72'-8"	1	79	4			
MC.7	"	"	70'-7"	1	78	4			
MC.8	"	"	68'-9"	1	76	4			
MC.9	"	"	67'-0"	1	74	4			
MC.10	"	"	65'-5 1/2"	1	72	4			
MC.11	"	"	63'-5 1/2"	1	71	4			
MC.12	"	"	61'-9"	1	69	4			
MC.13	"	"	60'-1"	1	66	5			
MC.14	"	"	58'-3"	1	64	5			
MC.15	"	"	56'-6 1/2"	1	62	5			
MC.16	"	"	54'-10 1/2"	1	60	5			
MC.17	"	"	51'-8"	1	57	5			
MC.18	"	"	47'-10 1/2"	1	53	5			
MC.19	"	"	44'-4 1/2"	1	50	5			
MC.20	"	"	40'-10"	1	46	5			
MC.21	"	"	37'-5 1/2"	1	41	2			
MC.22	"	"	33'-10 1/2"	1	38	2			
MC.23	"	"	30'-4"	1	34	2			
MC.24	"	"	25'-11 1/2"	1	31	2			
MC.25	"	"	23'-5"	1	26	1			
MC.26	"	"	19'-11"	1	22	1			
MC.27	"	"	13'-5 1/2"	1	19	1			
MC.28	"	"	12'-11 1/2"	1	15	1			
MC.29	"	"	9'-5"	1	12	1			
MC.30	"	"	75'-0 1/2"	1	85	4			
MC.31	"	"	73'-10"	1	81	4			
MC.32	"	"	72'-0"	1	79	4			
MC.33	"	"	70'-4"	1	77	4			
MC.34	"	"	68'-7 1/2"	1	76	4			
MC.35	"	"	66'-5 1/2"	1	74	4			
MC.36	"	"	65'-0 1/2"	1	72	4			
MC.37	"	"	63'-4"	1	70	4			
MC.38	"	"	62'-0"	1	69	4			
MC.39	"	"	59'-10"	1	65	3			
MC.40	"	"	58'-1 1/2"	1	64	3			
MC.41	"	"	56'-5 1/2"	1	62	3			
MC.42	"	"	54'-7"	1	60	3			
MC.43	"	"	52'-11"	1	58	3			
MC.44	"	"	49'-4"	1	55	3			
MC.45	"	"	45'-11"	1	51	3			
MC.46	"	"	42'-5"	1	48	3			
MC.47	"	"	39'-11"	1	43	2			
MC.48	"	"	35'-5"	1	39	2			
MC.49	"	"	31'-11"	1	36	2			
MC.50	"	"	28'-5"	1	32	2			
MC.51	"	"	25'-0"	1	29	2			
MC.52	"	"	21'-9"	1	24	1			
MC.53	"	"	17'-11"	1	20	1			
MC.54	"	"	14'-0"	1	17	1			
MC.55	"	"	11'-0"	1	13	1			
MC.56	"	"	7'-0"	1	10	1			

BAR	DIA	SPACING	LENGTH	TOTAL NO.	TOTAL LENGTH	BENDING DIAGRAM			POSITION	
M.F.1	1/2"	"	12'-4 1/2"	2	25	a	b	c		Effluent channel Beams top face Beams top face Effluent channel Inlet channel
M.F.2	"	"	12'-8"	4	43	a	b	c		
M.F.3	"	"	10'-11"	4	44	a	b	c		
M.F.4	"	"	7'-10 1/2"	6	48	a	b	c		
M.F.5	"	"	4'-7 1/2"	5	24	a	b	c		
M.F.6	"	"	2'-9 1/2"	5	10	a	b	c		
M.F.7	"	"	4'-0 1/2"	3	13	a	b	c		
M.F.8	"	"	2'-6 1/2"	3	15	a	b	c		
M.G.1	1/2"	"	9'-3"	2	18	a	b	c		Inlet channel Inlet channel bypass Inlet channel bypass
M.G.2	"	"	8'-2 1/2"	2	17	a	b	c		
M.G.3	"	"	8'-0"	2	16	a	b	c		
M.G.4	"	"	7'-8"	2	16	a	b	c		
M.G.5	"	"	7'-4 1/2"	2	15	a	b	c		
M.G.6	"	"	7'-1 1/2"	2	15	a	b	c		
M.G.7	"	"	6'-10 1/2"	2	14	a	b	c		
M.G.8	"	"	6'-10 1/2"	2	14	a	b	c		
M.G.9	"	"	6'-0"	2	13	a	b	c		
M.G.10	"	"	6'-0"	2	13	a	b	c		
M.G.11	"	"	6'-0"	2	13	a	b	c		
M.G.12	"	"	6'-0"	2	13	a	b	c		
M.G.13	"	"	6'-0"	2	13	a	b	c		
M.H.1	1/2"	"	20'-5 1/2"	1	21	a	b	c	Weir nib	
M.H.2	3/8"	"	5'-8"	2	12	a	b	c	Inlet channel	
M.I.1	1/2"	"	16'-3"	4	67	a	b	c	Beams - Bottom face " " " " Top face	
M.I.2	"	"	20'-1 1/2"	2	41	a	b	c		
M.I.3	"	"	13'-1 1/2"	2	33	a	b	c		
M.I.4	"	"	2'-4 1/2"	78	184	a	b	c		
M.I.5	1/2"	"	3'-4 1/2"	2	7	a	b	c	Inlet Channel	
M.K.1	1/2"	"	10'-1 1/2"	4	44	a	b	c	Beams - top face " " " " Inlet channel Effluent channel	
M.K.2	"	"	10'-0"	4	42	a	b	c		
M.K.3	"	"	3'-1 1/2"	36	121	a	b	c		
M.K.4	"	"	3'-7 1/2"	8	33	a	b	c		
M.K.5	"	"	12'-0 1/2"	6	73	a	b	c		
M.L.1	1/2"	12"	3'-7 3/4"	36	132	a	b	c	Beams - stirrups	

SUMMARY :					
DIA	LENGTH	WEIGHT (LBS)			
1/2"	153	313			
3/8"	390	1023			
1/2"	18138	8817			
3/8"	781	234			
TOTAL WEIGHT		10447 LBS.	= 4.66 TONS		

BIOLOGICAL TRICKLING FILTER						
F.A.1	1/2"	3"	5'-0"	400	2200	Walls - inner & outer face Dowel bars - construction joints Centre column base Beam under expansion joints
F.A.2	"	"	2'-0"	140	565	
F.A.3	"	"	Varico	30	180	
F.A.4	"	"	4'-10"	4	20	
F.B.1	1/2"	3"	4'-1 1/2"	200	825	Walls inner face lower
F.C.1	1/2"	3" approx.	15'-7"	8	125	Footings lower face " " " " Footings upper face
F.C.2	"	"	16'-2"	8	130	
F.C.3	"	"	16'-9"	8	134	
F.C.4	"	"	17'-4"	8	139	
F.C.5	"	"	15'-11 1/2"	8	128	

BAR	DIA	SPACING	LENGTH	TOTAL NO.	TOTAL LENGTH	BENDING DIAGRAM		POSITION
M.O.1	1/2"	0"	9'-5 1/2"	78	738	a	b	Vertical wall - outer
M.E.1	1/2"	"	15'-5 1/2"	13	201	a	b	Outer face - hopper
M.E.2	"	"	15'-1 1/2"	13	197	a	b	Inner face - hopper

BAR	DIA	SPACING	LENGTH	TOTAL NO.	TOTAL LENGTH	BENDING DIAGRAM			POSITION		
F.G.6	1/2"	3" approx.	16'-7"	8	133	a	b	c		Footings upper face " " " " Wall inner face Wall outer face Effluent channel " " " " " " " " " " " " " " " "	
F.G.7	"	"	17'-0"	8	138	a	b	c			
F.G.8	"	"	17'-9 1/2"	8	142	a	b	c			
F.G.9	"	"	17'-10 1/2"	72	1257	a	b	c			
F.G.10	"	"	18'-1 1/2"	72	1306	a	b	c			
F.G.11	"	"	18'-5 1/2"	8	148	a	b	c			
F.G.12	"	"	18'-10"	8	151	a	b	c			
F.G.13	"	"	13'-3"	8	154	a	b	c			
F.G.14	"	"	13'-3"	8	154	a	b	c			
F.D.1	1/2"	"	Towal Col height	4	32	a	b	c			Centre column Walls - outer face lower
F.D.2	"	"	6'-2 1/2"	200	1242	a	b	c			
F.D.3	"	"	5'-1"	245	1246	a	b	c			
F.E.1	1/2"	12"	7'-5 1/2"		40	Bend on 1/2" dia. pin. No. required depends on height of column.					Centre column
F.F.1	1/2"	4 1/2"	Average 5'-1 1/2"	142	703	a	b	c			Footings upper face and effluent channel.
F.G.1	1/2"	4 1/2"	5'-8"	5	23	a	b	c	Footings upper face and effluent channel at outlet box.		
F.H.1	1/2"	6"	11'-3"	4	45	Bend on 1/2" dia. pin.			Outlet box		
F.I.1	1/2"	"	7'-8"	1	8	a	b	c	Outlet box		
F.I.2	"	"	8'-8 1/2"	6	53	a	b	c			
F.K.1	1/2"	6"	7'-11"	4	32	a	b	c	Outlet box		

REVISIONS
 SCALE
 DRAWN P.S.A.
 CHECKED [Signature] - 1/1/70
 PASSED
 TARDOM SHIRE COUNCIL
 TARDOM SEWERAGE SCHEME
 STEEL LIST SHEET N°1
 70-54
 C. M. CALDER CONSULTING ENGINEER CHINCHILLA
 W. G. Calder Engr. Chinchilla 6-7-70



TAROOM SEWAGE TREATMENT PLANT

STRUCTURAL SPECIFICATION

CONCRETE WORKS

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Rev.	Date	Author	Comment
0	10-May-23	PG	Issue For Review
1	17-October-24	JP	Issue For Review



Doc No: 2766-SPC-STR-0001_1 Concrete Works.docx		
Approved & Authorised for Issue		
Name	Sign	Date
P.Gill		17-OCT-24
Superintendent		
Name	Sign	Date

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1 GLOSSARY OF TERMS

ABBREVIATIONS	
AS	Australian Standard
BSC	Banana Shire Council
EIC	Electrical, Instrumentation & Controls
GANDEN	GANDEN Engineers and Project Managers
PPR	Principal Project Requirements
STP	Sewage Treatment Plant
VSD	Variable Speed Drive
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant
WSA	Water Services Association (Australia)
NZS	New Zealand Standard
ISO	International Standard Organization
NATA	National Association of Testing Authorities
GITA	Geotechnical Inspection and Testing Authority

2 GENERAL

2.1 SCOPE OF WORKS

This Specification sets out the requirements for Concrete Works for all reinforced structural concrete members for the Taroom STP Upgrade project. Where the extent of concrete works is significant and complex, the Contractor shall refer to the Specification for Concrete Works. The Contractor shall be wholly responsible for carrying out all concrete works in accordance with the requirements of this Specification and the associated Contract documents.

The Taroom STP is located on Tai Shue Street, Taroom QLD 4420. Site access is directly of Tai Shue Street. Refer 2766-REP-0001 Basis of Design report for site details and project history. The fabrication, supply and installation of structures shall be governed by the need for long periods of service without frequent maintenance and attention being necessary.

2.2 EXTENT OF WORKS

The extent of the concrete work shall include, but not be limited to, the following:

- Supply and fixing of reinforcement
- Design, documentation, provision, erection, and removal of formwork
- Supply and placement of concrete
- Sampling and testing of concrete and its components
- Finishing of concrete surfaces
- Curing and protection of concrete
- Supply and fixing of all joints, inserts, anchor bolts, embedded fixings, waterstops and bars
- Provision for all core holes and embedded services
- Design, documentation, provision, erection, and removal of all temporary works items required to deliver the concrete works

2.3 CODES

A current copy of the following codes shall be accessible to the Contractor and shall be available to the Superintendent as required. These codes shall include all amendments issued at the date of the signing of the Concrete Works contract.

CODE	TITLE
▪ AS 1012	Parts 1-18, Methods of Testing Concrete
▪ AS 1141	Methods for sampling and testing aggregates
▪ AS 1379	Specification and supply of concrete
▪ AS 1478.1	Chemical admixtures for concrete
▪ AS 2758.1	Part 1: Concrete aggregates
▪ AS 3582	Supplementary cementitious materials for use with portland and blended cement
▪ AS 3600	Concrete structures
▪ AS 3610:1995*	Formwork for concrete
▪ AS 3610.1*	Part 1: Formwork for concrete Specifications *(AS 3610 codes will coexist until release of AS 3610.2)
▪ AS 3735	Concrete structures for retaining liquids
▪ AS 3972	Portland and blended cements
▪ AS/NZ 4671	Steel reinforcing materials
▪ AS 4680	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles

2.4 INSPECTIONS

The Contractor is to coordinate and arrange all inspections required by this Specification. At the appointed time of inspections, all preparation works must be complete and ready for a final inspection, which shall have been confirmed by the Contractor conducting his own Quality Assurance procedures and inspections.

All site detritus resulting from the preparation works by the Contractor shall have been removed by the Contractor.

The Contractor shall give sufficient notice of inspections to the Superintendent of not less than 24 hours.

2.5 CONSTRUCTION PROCEDURE

The Contractor shall be responsible for all concrete construction procedures and must ensure that no part of the structure is overstressed as a result of these procedures or because of the construction loads that are applied.

The Contractor shall conform to any restrictions imposed by the Superintendent with regards to construction joints and shall confer with the Superintendent should he wish to vary the documented structure to conform to his proposed construction procedure. Such variations, if approved, shall be at the Contractor's expense.

2.6 RECORDS, SAMPLES, TESTS

The Contractor shall ensure that any required records, samples, and tests of the concrete work are maintained and that the requirements in this regard of the various sections of the Specification are met. The taking of any records, samples and tests shall be at the expense of the Contractor.

2.7 CO-ORDINATION OF SERVICES

The Contractor is to coordinate all concrete works with all other Trades and Contractors delivering the Project. Any delays to the works due to the lack of coordination by the Contractor will be the responsibility of the Contractor.

After the completion of all preparatory works, the Contractor shall inspect the prepared works and advise the Superintendent that the works are in accordance with the contract documents and ready for inspection.

2.8 DIMENSIONING

In the case of any difference between scaled dimensions and figures on contract drawings, the figures shall prevail. The Contractor is to employ an accredited surveyor for the purposes of setting out and dimensioning.

The dimensional tolerances to the concrete works will be as required in the various sections of the Specification. Notwithstanding, the concrete work shall be built wholly within the boundaries of the site and within any envelope defined by the building in general or by any requirement of a Statutory Authority.

2.9 COMPLETION

Complete all contracted work in accordance with the Contract documents and written variation orders issued by the Superintendent.

2.10 AS-CONSTRUCTED INFORMATION

The Contractor shall provide the Superintendent with an as-constructed survey of the completed concrete works. This information shall include concrete works that have varied through approval processes or site instructions issued throughout the course of the Contract works. The information shall be presented in a manner that will enable as-constructed documents to be prepared by others.

As-constructed information shall include concrete members that vary from their intended size or position by distances more than specified tolerances. Provision of as-constructed information shall not be interpreted as a variation approval, nor does it relieve the Contractor of his responsibility to deliver works in accordance with the Contract documentation. Provision of all as-constructed concrete information for each structure shall occur within 10 days of completion of concrete works for that structure.

3 REINFORCEMENT SUPPLY & PLACEMENT

The Contractor shall supply, schedule, fabricate and deliver all reinforcing bars and dowels for the complete placing and fixing of the reinforcement, to the satisfaction of the Superintendent. This shall include scheduling, and attending weekly meetings to review, ongoing deliveries.

The Contractor shall provide all materials, including chairs, metal tie wire, stools, spacers, equipment, and labour required for the taking delivery, placement, fixing and protection of reinforcement shown or indicated on the Contract drawings or specified here-in.

All reinforcement materials shall comply with AS/NZS 4671.

3.1 BENDING SCHEDULES AND MARKING PLANS

The Contractor shall be responsible to produce all reinforcement schedules necessary for the fabrication of the reinforcement. The Contractor shall be responsible for the production all marking plans necessary for the correct placement and position of all reinforcement.

Submit copies of bending schedules and marking plans to the Superintendent in advance of delivery, showing the location, shape, size, and grade of all reinforcement.

3.2 BENDING, SPLICING AND WELDING

3.2.1 Bending

Reinforcement shall not be bent or strained in a manner that will damage it. Where bending of reinforcement is required by the contract drawings, the bending processes and diameter of such bends shall be restricted to the requirements of AS 3600.

3.2.2 Splicing

When splices in reinforcement are not shown on the contract drawings, submit details of the proposed splices to the Superintendent for approval.

3.2.3 Welding

Reinforcement shall not be welded except as shown on the Contract drawings or as requested by the Contractor and specifically approved by the Superintendent. Any approved welding shall comply with the requirements of AS 1554, Part 3. Welding shall not be carried out within 75mm of the start of a bend, or at any point in a bar which has been re-bent.

3.3 SURFACE CONDITION OF REINFORCEMENT

Reinforcement shall be supplied and maintained free from loose mill scale, loose rust, mud, oil, grease, and other coatings that would reduce the bond between the concrete and the reinforcement.

Where reinforcement has been partially encased and its non-encased portion is to be directly exposed to the weather for a period likely to result in reinforcement deterioration, it shall be protected by coating with a cement wash or the equivalent.

3.4 REINFORCEMENT ACCESSORIES

Supply all reinforcement accessories including, but not limited to, dowels, pull-out bars, reboxes, reinforcement couplers, shear rails and proprietary shear couplers and key joints.

Supply all dowels hot-dipped galvanized unless noted otherwise, straight with square ends free from burrs. Dowels specified as stainless steel shall be grade 316.

3.5 FABRICATION AND PLACING TOLERANCES

Unless shown otherwise on the contract drawings, the reinforcement shall be cut and bent or otherwise fabricated to the dimensional tolerances required by AS 3600.

Unless shown otherwise on the contract drawings, the reinforcement shall be fixed and maintained in its correct position within the tolerances required by AS 3600.

3.6 PLACING AND FIXING OF REINFORCEMENT

Reinforcement shall be as shown on the contract drawings and shall be securely held in its correct position within the tolerances specified herein until the concrete has hardened. Secure the reinforcement against displacement by tying at intersections with annealed iron wire ties not smaller than 1.25mm diameter, or by approved clips. Bend the ends of wire ties away from nearby faces of forms. The ties shall not project into the concrete cover. Provide and maintain the cover to reinforcement as shown on the Contract drawings within the specified tolerances.

Mats: In reinforcement in the form of a mat, secure each bar at alternate intersections, and at other points as required.

Beams: Secure each beam ligature to a bar in each corner of the ligature. Secure longitudinal beam reinforcement by spacers or ties at not more than 1000mm intervals.

Columns: Secure longitudinal column reinforcement to all ligatures at every intersection.

3.6.1 Supports For Reinforcement

Chairs, stools, spacers, hangers, and ties may be used as supports for reinforcement and shall be made of metal; concrete or plastics. Pieces of wood, aggregate, brick or the like shall not be used. Unprotected ferrous metal shall not be used in such supports where they extend to the cover zone of the concrete, or where they are used with galvanised, or zinc coated reinforcement.

The supports shall be adequate to withstand construction traffic and shall be sufficient in number and spacing to maintain the reinforcement in its correct position. Care shall be given to the support of light gauge reinforcement and of reinforcement in general where the concrete is to be cast against the ground or against fill. Bar supports shall be provided at a maximum of 60 bar diameters or 800mm, whichever is the lesser. Mesh supports shall be provided at a maximum of 750mm. Care shall be taken that no damage occurs to any waterproofing membrane or vapour barrier and a metal or plastic plate or equivalent shall be placed under each chair.

3.6.2 Conductive Electrical Paths

The Contractor is to coordinate required electrical earthing paths through the reinforcement of concrete elements. Earthing paths shall be determined and installed by the Contractor, prior to the casting of the relevant concrete elements.

3.6.3 Dowels

Dowels cast into concrete shall be installed accurately and to their true alignment. Where dowel forms, caps or sleeves are used, the forms, caps and sleeves shall be installed such as to maintain the correct position and alignment of the dowels. The Contractor shall grease dowels as specified in the Contract documents.

3.6.4 Safety

Supply, install and maintain all safety caps and protective covers to all horizontal and vertical starter bars required by regulation to have them installed during construction. All wall vertical starter bars shall be provided with lace bars to maintain safety and alignment during concrete pours.

3.7 INSPECTION

The Contractor is to arrange a single pre-pour inspection by the Superintendent. At the appointed time of inspection, all reinforcement must be complete, securely and properly placed, and in a condition ready for concrete pour. All excess reinforcement, tie wire, off-cuts and general site detritus resulting from the works of the Contractor shall have been removed from the forms by the Contractor.

3.8 POST CONCRETING WORKS

3.8.1 Pull-out Bars

Straighten all starter bars which have been bent at the face of construction joints.

3.8.2 Concrete Drilling

The Contractor shall be responsible for undertaking all operations required for the installation of dowels or ties into hardened concrete. The operations shall be in accordance with the Specification section for [Post-Installed Fixings](#).

4 FORMWORK

The Contractor shall design and construct all formwork to produce concrete members that will conform within the specified tolerances to the shapes, lines, levels, and dimensions required by the Contract drawings. The responsibility for the sufficiency of the whole of the formwork shall rest entirely with the Contractor, except that where the formwork design is included in the Contract documents then the Contractor's responsibility shall exclude this aspect.

4.1 DIMENSIONAL TOLERANCES

The design and construction of the formwork shall be such that concrete produced from the forms shall conform to the dimensional requirements of the Contract drawings within the dimensional and surface tolerances specified for each part of the works. The dimensions, lines, levels, and grades of the formwork shall be checked by an accredited surveyor, engaged by the Contractor, immediately prior to the placing of the concrete and again immediately before the removal of the formwork.

The specified surface tolerances will conform to the AS 3610 Table: "Acceptable Quality of Surface Finish", in accordance with the class of surface finish as specified in the Contract documents.

The dimensional tolerance requirements vary according to the quality of surface finish and the importance of the particular dimension. Dimensional tolerances presented in [Table 2](#) shall constitute a minimum standard of finish for concrete elements under this Specification. The surfaces of all off-form finishes to concrete shall be true planes within the tolerances specified in [Table 2](#). The trueness of such surfaces shall be determined by the deviation of the surface from a 3-metre-long straight edge placed anywhere on the surface.

1. The deviations from any specified height, plan, or cross-sectional dimension shall not exceed 1/200 times the specified dimension or 5mm, whichever is greater
2. The deviation of any point on the surface of a structural element from the true position in space shall not exceed the value given in [Table 2](#) for the appropriate element
3. The relative deviation of any two points on the surface of a structural element from their true positions in space shall not exceed the greater of the proportion of the dimension between them, or the figured amount, as given in [Table 2](#) for the appropriate element of the structure
4. The misalignment between face linings at the joints in facing panels, the size of fins, and recesses at joints resulting from the joint sealer not being flush with the formed surfaces, shall not exceed the figured dimensions given in [Table 2](#) for the appropriate element of the structure.

4.2 FORMWORK INSPECTION

The Contractor's formwork design engineer shall inspect and provide structural certification of completed in-situ formwork. The Contractor shall provide the certification to the Superintendent, and concrete placement shall not proceed until the certificate is provided. The Contractor will hold sole responsibility for any delays resulting from an inability to provide the certification.

4.3 FORMWORK DESIGN

4.3.1 Documentation

Prepare and submit formwork documentation in accordance with AS 3610.1, together with details of proposed form linings, form coatings, release agents and, where applicable, re-use of formwork. Show layouts of all elements visible in the finished work, including form tie bolts, sheet joints, and vertical and horizontal pour or shutter joints. Documentation shall include formwork propping/back-propping drawings and procedures, confirming support locations and associated details.

Prepare calculations to show that the allowable concrete stresses will not be exceeded where:

- Formwork procedures or loadings differ from the information included in the Contract documents
- Contract documents do not include formwork shoring or stripping procedures or allowable loadings from stacked materials
- Props above a floor do not coincide with the props below.

4.3.2 Formwork Design Certification

The Contractor shall submit written certification from a registered engineer experienced in formwork design that all formwork supports, propping, back-propping and reshoring has been designed in accordance with the requirements of AS3610 and is structurally adequate to support the design loads. The certificate is to be supplied with the formwork documentation.

4.3.3 Loads

The formwork shall be designed to withstand all static and dynamic forces both vertical and horizontal resulting from dead, superimposed, wind and any other loads that could occur simultaneously during the period the formwork is used. The magnitude and duration of all such forces shall be considered in the design.

4.3.4 Strength

The formwork shall be designed to safely carry the applied loads by using either the method of Permissible Stress or that of Limit State. The properties of the materials shall be those derived from the appropriate standards defined in Table 4.5.4 of AS 3610, and the load factors to be used shall be those defined in Tables 4.5.1, 2, 3 of AS 3610.

4.3.5 Stability

The falsework shall be designed to ensure the stability of the forms particularly under the action of horizontal loads arising from wind, flood debris and drift, lateral pressure of plastic concrete, prestressing forces, external and internal vibration of concrete, concrete dumping and stopping and starting of equipment and shall be provided with diagonal bracing or shoring as required.

4.3.6 Deflection

The formwork shall be designed to withstand the applied loads so that the sum of: -

- (i) Its deflection under all loads
- (ii) Falsework settlements, including foundation settlement
- (iii) Its initial inaccuracy in position

will not exceed the absolute or relative deviations from true position permitted under the Specification.

4.3.7 Falsework Settlement

Foundations of sufficient capacity to carry the maximum loads imposed by formwork during construction shall be provided on ground, soleplates, spread footings or pile footing. Account shall be taken of long-term settlements of footing in clay soils. In determining the magnitude of likely settlements in falsework, account shall also be taken of such movement within the falsework as elastic and creep shortening, joint "take-up" and side grain compression in timber members at horizontal joints.

4.3.8 Adjustment of Falsework

Falsework shall be designed to allow vertical adjustment to be made to facilitate erection and stripping of forms and to compensate for any movements which may occur.

4.3.9 Defective Formwork

If any formwork is displaced so that tolerances on finished concrete will be exceeded during concreting or within the period specified for retention of the formwork, the formwork shall be removed between such limits as the Superintendent shall determine. Construction joints shall be formed, and the section of work shall be reconstructed after the formwork has been strengthened and adjusted.

4.4 TYPES OF FORMWORK

4.4.1 General

The types of formwork required throughout the project shall be determined by the Contractor to achieve the surface finish and the shapes, lines, levels and dimensions of the concrete work required by the contract drawings and the Specification.

The materials to be used in the formwork shall comply with the appropriate Australian Standards, or in their absence other appropriate National Standards.

4.4.2 Fillet Beads

- (i) Flush face joints, e.g. soffit joints of slab junctions and common face column to beam connections, shall have maximum 15mm deep chamfered recess joints to the approval of the Superintendent.
- (ii) Unless shown otherwise on the contract drawings, forms shall be chamfered for re-entrant angles and filleted for outside corners. The face of the bevel in each case shall be 25mm.
- (iii) To underside of all weather-exposed ledges, allow for a 15mm deep chamfered recess for weather drip to the approval of the Superintendent.
- (iv) To underside of weather-exposed junctions of precast and insitu concrete elements, allow for a 15mm deep chamfered recess for weather drip to the approval of the Superintendent.
- (v) To columns and beams adjoining window openings, allow for beads to form recesses to take doors and windows to the approval of the Superintendent. Refer to the Contract documents for extent and location.

4.4.3 Void Formers

The material and construction used for the forming of voids, blockouts and the like shall be of sufficient strength to prevent deformation or destruction under the load of wet concrete and construction loads and such formers shall be so positioned and so secured that they will not be dislodged during the concreting and will produce the required void within the tolerances stipulated in the Specification. The formers shall be such as to prevent leakage of wet concrete or water into the voids, and care must be taken to resist the buoyancy effects of the formers within the wet concrete.

If the void former is not removed, it shall be of lightweight construction and unless fully surrounded and protected by concrete, or the ground, it shall also be non-combustible.

Void formers used to form a space to allow for differential movement between structural elements shall be of adequate strength to support the weight of wet concrete and shall have sufficient compressibility to permit the movement specified.

All void formers are to be adequately protected by wrapping in P.V.C. membrane, or by other means, against damage by water.

4.4.4 Ground Formwork

Where the Contract drawings do not show that piers and/or beams below ground are to be cast against formwork then no formwork will be required other than:

- (i) That which may be necessary to prevent the sides of the excavation collapsing.
- (ii) As a suitable membrane to prevent contamination of the concrete, in the case of aggressive ground, or to prevent loss of water, slurry or fines in the case of highly pervious ground, or to keep the reinforcement clean during placing of the concrete.

However, the approval of the Superintendent to install such formwork shall be required.

4.4.5 Permanent or Lost Formwork

Where it is not possible or practicable to remove formwork from formed surfaces, permanent or lost formwork shall be used. Such formwork shall be of sufficient strength and rigidity to support the weight of the wet concrete and construction loads and shall be non-combustible. Where such formwork is also acting as a part of a construction joint, it shall be capable of transmitting any shear at the joint by indentation, penetration, or the like. Permanent formers containing Calcium Chloride shall not be used. Timber permanent formwork shall not be used.

4.5 TREATMENT OF FORMS

4.5.1 Form Linings and Facings

The Contractor shall select the form lining or facing necessary to produce the required quality of finished concrete surface. He shall provide sufficient evidence to ensure that no reaction which will affect the concrete surface will occur between the form lining, form facing, the release agent, the plastic concrete, any concrete material, admixture, sealant or curing compound. The selection of a suitable lining or facing shall not be detrimental to the application of, or injurious to, any subsequent finishes such as paint, render, adhesives etc.

4.5.2 Release Agents

Form linings or form facings shall be coated prior to placing of concrete with a suitable release agent that also satisfies the requirements of the Specification. The Contractor shall ensure that excessive application of the release agent does not "puddle" and so cause staining or concrete surface cure retardation. The Contractor shall prevent coating of reinforcement or construction joints with the release agent. Where colour control of a concrete surface is required by the Specification, then prior to the first use of a form lining (and subsequent to the application of the release agent) it shall be coated with a cement wash which after drying shall be removed and the lining then made ready for use by again coating with the release agent. In the case of absorbent form linings this process shall be repeated until even absorbency is obtained. In the case of steel linings, rust inhibiting release agent shall be used. Release agents shall not be detrimental to the application of, or injurious to, any subsequent finishes such as paint, render, adhesives, flooring etc.

4.5.3 Cleaning of Forms

All forms shall be thoroughly cleaned at the time of placing concrete, and all excess formwork, off-cuts, sawdust, and general site detritus resulting from the works shall have been removed from the forms by the Contractor. Free water shall also be removed from the forms. The Contractor shall use compressed air to clear all formed surfaces prior to concrete being poured.

To facilitate the removal of major debris from within the forms and to allow inspection immediately before the placing of concrete, some form elements may need to be readily removable.

4.5.4 Repair of Formwork

Formwork that has become damaged shall not be used unless repaired to the satisfaction of the Superintendent.

Any repair carried out on the form surfaces shall be shown by test to produce the concrete surface finish required by the Specification for the concrete element concerned.

4.5.5 Re-Use of Forms

The number of re-uses and the conditions of faces and edges shall be consistent with the concrete surface finish specified.

4.6 FINISHES TO FORMED CONCRETE SURFACES

4.6.1 Classification of Form Finishes

The surface finishes required from forms in the various concrete elements of the structure are as specified in the Contract documents. The formed surfaces of each concrete member shall be finished at least to a minimum standard in accordance with the schedules of [Table 3](#) and the relevant contract drawings. The classifications are generally in accordance with the Applicability of Surface Classes in Table 3.2.1 of AS 3610.1, but where they are modified, the Specification shall prevail.

Where a "Schedule of Formed Finishes" requires better standard than minimum structural requirements, then the "Schedule of Formed Finishes" shall take precedence.

4.6.2 Form Bolts

Form bolts shall be so designed and installed that they may be extracted without damaging the surrounding concrete. The embedded part of all form-ties shall be located no closer than 35mm to protected concrete surfaces and 55mm to exposed concrete surfaces. The Contractor shall be responsible for the grouting of all form bolt holes, using FOSROC Nitomortar AP, or Sikadur 31CF, or similar to approval.

4.7 FORMWORK STRIPPING

4.7.1 General

The forms shall not be disturbed until the concrete in contact with them has hardened sufficiently to withstand such action without damage. Formwork shall not be removed until the concrete has acquired sufficient strength to support safely its own mass and any superimposed load without undue deflection. The removal of formwork shall be carried out in such a manner and sequence that the structure is not subject to impact, excessive load or eccentric load, and shall comply with Clauses 5.4.3 and 5.4.4 of AS 3610. The stripping procedures shall be carried out in a controlled and planned manner that ensures the gradual transfer of load from the formwork or supports to the permanent structure.

Neither walls nor any permanent loading shall be erected on any part of the structure while it is still supported by formwork.

4.7.2 Suspended Work Not Required to Support Slabs Above

Formwork may be stripped in two stages, the first being the removal of forms between shores which are left undisturbed or between additional secondary shores, and the second when such shores are finally removed.

For reinforced concrete using normal Portland or blended cement, both stripping stages shall conform to the minimum stripping times for the appropriate effective spans and temperatures given in Table 4 of this section of the Specification. The minimum stripping times given in Table 4 of this section of the Specification may be reduced provided that evidence is furnished to the satisfaction of the Superintendent that the concrete to be stripped has attained sufficient strength to safely carry its own mass and the construction load without undue deflection. In the case of removal of forms between shores, sufficient evidence would be that the maximum extreme fibre-tensile stress in the concrete calculated by elastic theory is less than the indirect tensile strength of representative samples reduced by a safety factor of 1.5. In the case of removal of shores, evidence shall be furnished to the Superintendent that the member has attained sufficient strength to support all super-imposed loads without excessive stress or deflection.

4.7.3 Reshoring or Back Propping

Subject to the provisions for formwork stripping, reshoring or back propping may be permitted with the approval of the Superintendent and subject to the following conditions.

- Where reshoring is proposed, the shores supporting each slab shall be relaxed at a time consistent with "Suspended Work Not Required.", but before the application of load from the slab above.
- All shores on any given panel of the slab are to be relaxed in one operation and the panel reshored within four hours of the commencement of that operation.
- Operations shall be performed so that at no time will areas of new construction be required to support combined dead and construction loads in excess of their capability as determined by design load and concrete strength at the time of stripping and reshoring.
- In no case shall reshores be so located as to significantly alter the pattern of stress determined in the structural analysis. Reshores shall be tightened only to the extent that they are firmly in place against the concrete and shall not be used as jacks. One end of each reshore shall be fitted with soft wood packing.
- The reshoring system shall be such that it contains a sufficient number of shores of adequate size to carry any load that may be imposed on the system. The bearing pressure on the cap and base of reshores shall not exceed 2 MPa.
- When reshoring flat slab construction, one row of reshores shall be placed along each common boundary between column and middle strips in both directions, with additional rows of reshores being provided as required to carry the full superimposed loads.

5 CONCRETE SUPPLY

The Contractor shall be wholly responsible for the supply of the concrete in accordance with the Specification and the associated contract documents, and include all aspects of concrete mix design, mix creation, transportation, and testing.

5.1 QUALITY CONTROL

The Contractor shall implement Quality Control Testing throughout the supply of concrete to the works to establish that the performance requirements of the Specification are being met. This testing shall be Project Assessment in accordance with AS 1379. Sampling and testing requirements are specified under the Sampling & Testing clause of this section of the Specification.

5.2 MATERIALS

5.2.1 General

The concrete, mortar, and grout for the various elements of the structure shall contain the specific types of materials listed in [Table 1](#), "Concrete Types and Performance Requirements", and shall satisfy the materials requirements of the Codes mentioned above.

5.2.2 Cement

Cements consisting of Portland cement or of mixtures of Portland cement and one or both of fly-ash and ground granulated iron blast-furnace slag shall comply with AS 3972. It shall be permissible to use other cements if approved by the Superintendent, and if the resulting concrete has strength, durability, and other characteristics not inferior to those required by AS 3972.

5.2.3 Aggregate

Dense aggregate shall comply with AS 2758.1. The Contractor shall, prior to commencement of the work, supply the grading envelope and anticipated normal grading of each aggregate, together with the source of supply, for approval.

5.2.4 Water

The water used in mixing concrete shall be clean and free from injurious amounts of oil, acid, alkali, organic matter, or other deleterious substances and be of potable quality.

5.2.5 Chemical Admixtures

Chemical admixtures may be used only if approved by the Superintendent. Requests for the approval of admixtures shall be made in writing to the Superintendent, giving the name of the admixtures, their properties, their effects in concrete, and stating the need for use of such admixtures. The admixtures and their use shall comply with AS 1478.1. The Superintendent will not approve admixtures containing chlorides or chloride compounds.

5.2.6 Supplementary Cementitious Materials

The use of blended cements shall be confined to the use of fly-ash and/or ground granulated iron blast-furnace slag as supplementary cementitious materials. Supplementary cementitious materials used shall comply with the requirements of AS 3582. Ground granulated iron blast-furnace slag shall not be used without the written approval of the Superintendent. Silica fume shall not be used as a supplementary cementitious material.

5.3 PERFORMANCE REQUIREMENTS

The concrete for the various parts of the work shall be designed and produced such that the performance requirements of this section and [Table 1](#) shall be met. The acceptance and rejection criteria of the concrete being supplied are specified under the Acceptance Criteria clause of this section of the Specification.

As a guide for the Contractor to attain performance requirements, concrete mix/material suggestions have been included in [Table 1](#), however, the precise selection and proportioning of all materials shall be the responsibility of the Contractor.

The selection, proportioning and mixing of the concrete materials shall be such as to produce a mix that works readily into corners and angles of the forms and around reinforcement with the method of placement employed on the work, but without permitting the material to segregate or excess free water to collect on the surface. The resultant concrete shall be sound and have other qualities as specified in this Section.

Details of the proposed concrete mix (for each of the specified characteristic strengths) shall be submitted to the Superintendent not less than 7 days prior to the first placement of such concrete together with sufficient test data to demonstrate that the proposed mixes will satisfy the specified performance requirements.

5.3.1 Strength

The characteristic compressive cylinder strength of the concrete, as defined in AS 3600, that is required for the various parts of the work shall be as shown on the contract drawings and/or [Table 1](#) for the part against the symbol f_c.

5.3.2 Slump

The slump required for the various parts of the work shall be as shown on the contract drawings and/or [Table 1](#) and shall be checked adjacent to the forms for that part. The measure and assessment of concrete slump at the point of delivery constitutes a “Hold” point for the Contractor.

5.3.3 Drying Shrinkage

Normal class concrete will not have a shrinkage requirement specified, however, it shall conform to Clause 1.5.3 (b) of AS 1379. This shall be evidenced by Production Testing records provided by the Contractor to the Superintendent.

Special class concrete having specific shrinkage requirements shall be as specified in [Table 1](#) and within the Contract documents.

5.3.4 Density

Concrete shall have a mass per unit volume in the range 2100 kg/m³ to 2800 kg/m³. This shall be evidenced by Production Testing records provided by the Contractor to the Superintendent.

5.4 READY-MIXED CONCRETE

The concrete for every part of the works shall be supplied as ready-mixed concrete. Ready-mixed concrete shall be supplied in accordance with AS 1379, except as modified by the Specification. Delivery of ready-mixed concrete in non-agitating trucks will not be permitted.

The maximum elapsed time from the charging of the mixer with all dry materials and any of the required water or cement, to the discharging of the ready-mixed concrete at the site shall generally be in accordance with the following table: -

Concrete Temperature At Time of Placement	Maximum Elapsed Time from Charging of The Mixer to Discharge
Less than 5°C	not acceptable
5 - 24°C	2 hours
24 - 27°C	1 hour 30 minutes
27 - 30°C	1 hour
30 - 32°C	45 minutes
32 - 35°C	20 minutes
Greater than 35°C	not acceptable

However, the final criteria shall be the compliance of the Concrete with the specified performance requirements of [Table 1](#), including slump.

The Contractor shall ensure that the wash-out of delivery truck chutes occurs in the area designated as such by the Superintendent. Concrete remaining within the agitator shall be removed from the site immediately. The Contractor shall remove all excess concrete daily from the site, or as agreed with the Superintendent.

5.5 MIXING IN AN EMERGENCY

Under no circumstances will hand mixed concrete be permitted.

5.6 PUMPED CONCRETE MIXES

Pumped concrete shall only be used if approved by the Superintendent. Prior to approval being given, full details of the proposed mix shall be submitted to the Superintendent for review. The Contractor shall take full responsibility for the adequacy of the concrete mix so that the concrete can be pumped to its appropriate location and shall achieve the performance requirements set down in [Table 1](#).

The Contractor shall supply the priming slurry to the pumping line prior to concrete pours.

5.7 RE-TEMPERING

Concrete that has commenced to harden prior to placement will not be accepted.

5.8 HOT WEATHER MIXING

When the ambient temperature exceeds 32°C the concrete shall be supplied at a temperature not exceeding 32°C by employing one or more of the following procedures:

- (i) The use of chilled mixing water
- (ii) The addition of ice to the mixing water (no ice particle shall remain by the time of discharge of the concrete)
- (iii) Cooling of the coarse aggregate by shading and/or cold water spraying of the stockpiles.

Under no circumstances shall the concrete be supplied when the ambient temperature is greater than 35°C.

5.9 COLD WEATHER MIXING

Under no circumstances shall the concrete be supplied when the ambient temperature is less than 5°C.

5.10 SITE ADDITIONS

Do not add water or any other material to the concrete at the site without the approval of the Superintendent. For addition of water on site to be considered, it is a prerequisite that an appropriate measuring method satisfactory to the Superintendent be provided and that the manufacturer endorses the delivery docket that water may be added at site, with the permitted volume included. No claim shall be entertained arising from Superintendent's refusal to allow addition of water on site.

5.11 SAMPLING AND TESTING

The sampling and testing of all concrete shall be by Project Assessment. The acceptance and rejection criteria to be applied to the results of the concrete tests shall be those listed under the Acceptance Criteria clause of this section of the Specification.

All aspects of sampling, site treatment and testing of concrete specimens shall be carried out by NATA registered laboratory and personnel. All costs of any further sampling and testing that may be required on concrete liable to rejection shall be borne by the Contractor.

5.11.1 Sampling

5.11.1.1 Location of Sampling

All concrete samples shall be taken at the site approximate to the location of placing the concrete.

5.11.1.2 Method of Sampling

Sampling and identification shall be carried out in accordance with AS 1012, Parts 1 and 8.

5.11.1.3 Sampling Procedures

A random sampling procedure shall be adopted to ensure that each concrete batch shall have a reasonable chance of being tested and the details of the sampling techniques shall be kept on record with the test results. To identify samples, the following data must be recorded in the sampler's field book:

- job site
- date and time of taking the sample
- delivery truck number
- name of Contractor
- number of delivery docket or batch
- method of sampling
- location of sampling
- method of identifying cylinders
- location of batch of concrete after its placement
- slump of sample

5.11.1.4 Frequency of Sampling

The minimum frequency of sampling of concrete of each grade shall be in accordance with the following:

A batch shall be taken as a truckload of ready-mixed concrete. An operation shall be taken as the continuous pouring of similar concrete structural elements on any one day.

No. of Batches per Operation	No. of Samples
1	1
2 to 5	2
6 to 10	3
11 to 20	4
For each additional 10	1 additional sample

For the purposes of this Clause, horizontal and vertical elements shall not be classed as similar.

5.11.1.5 Size of Sample

The size of the sample shall be such that the number of test specimens taken is sufficient to supply all testing procedures necessary to prove the specific concrete properties as required by the complete list of performance requirements.

5.11.2 Test Specimens

The number and frequency of taking specimens from the concrete samples for the testing of the various performance requirements of the concrete shall be as listed below. At least two specimens shall be taken from the sample to represent a particular property and they shall be prepared in accordance with AS 1012 provisions specific to that particular property.

Records shall be kept and be made available to the Superintendent, on request, of all aspects of the Project Control Testing. These records shall provide the full history of sampling and testing of all specimens.

5.11.2.1 Characteristic Concrete Compressive Strength f'_c

The test strength of each sample shall be the average strength of the specimens taken from that sample, except in those special circumstances outlined in Clause 6.2.5 of AS 1379, in which case the strength of the sample shall be determined by the means outlined in that Clause.

The criterion for compliance with the performance requirements of [Table 1](#) shall be as specified under the Acceptance Criteria clause of this section of the Specification.

5.11.2.2 Slump

From each of the samples of concrete required by the Specification, a slump test specimen shall be prepared and tested in accordance with AS 1012.3.1. The criterion for compliance with the performance requirements of [Table 1](#) shall be as specified under the Acceptance Criteria clause of this section of the Specification.

5.11.2.3 Drying Shrinkage

As required, three (3) specimens shall be taken in accordance with AS 1012.13, from the special class concrete sampled in accordance with AS 1012.1. The assessment of drying shrinkage shall be on the basis of the average of the three standard 56-day test results. The concrete of the same type shall be tested every three - (3) months during the course of the project. The criterion for compliance with the performance requirements of [Table 1](#) shall be as specified under the Acceptance Criteria clause of this section of the Specification.

5.12 ACCEPTANCE CRITERIA & REJECTION OF CONCRETE

Concrete which has been specified in Table 1 to satisfy certain performance requirements, and which has been tested for such performance in accordance with the Specification, shall be deemed to comply if the specified acceptance criteria are satisfied. When the concrete fails to satisfy these criteria, it will be liable to rejection. It may also be liable to rejection under other specified criteria.

Nevertheless, the Superintendent may allow the rejected concrete to be retained on the following bases:

- (i) An appraisal of the statistical information related to the concrete strength
- (ii) Additional testing of the hardened concrete in place in accordance with Appendix B of AS 3600
- (iii) Structural investigation involving proof testing of the concrete elements in accordance with Appendix B of AS 3600
- (iv) Approved remedial work.

All costs associated with the acceptance of work that has been found liable to rejection shall be borne by the Contractor.

Where concrete work has been finally rejected it shall be removed to the extent determined by the Superintendent. This extent will not exceed the whole of the concrete between adjacent construction joints that contain the deficient concrete.

5.12.1 Acceptance Criteria

5.12.1.1 Characteristic Concrete Compressive Strength f'_c

The criteria for compliance with the characteristic compressive strength requirements of the Specification shall be as follows:

- (i) Notwithstanding clauses (ii) & (iii), concrete specified by characteristic compressive cylinder strength at twenty-eight (28) days shall be assessed and conform to the requirements of AS 1379, Specification and Supply of Concrete.
- (ii) Every sample has test strength not less than the specified characteristic value, **or**:
- (iii) The strength of one or more samples, though less than the specified characteristic value, is in each case not less than the greater of: -
 - (A) The specified characteristic strength minus 1.35 times the standard deviation, **and**
 - (B) 0.85 times the specific characteristic strength.

and also, the average strength of all the samples is not less than the specified characteristic strength plus $(1.65 - 1.65/\sqrt{\text{number of samples}})$ times the standard deviation.

5.12.1.2 Slump

The slump shall be deemed to comply with the specified requirements if the measured slump is within the tolerances for the specified slump as given in Table 5.1 of AS 1379. The assessment of slump shall be deemed a "Hold" point, and concrete with slump outside these tolerances shall be liable to rejection by the Superintendent, with the trucks containing such concrete turned away from site.

5.12.1.3 Drying Shrinkage

The criterion for compliance with the drying shrinkage requirements of the Specification shall be that the modified average test result for drying shrinkage of the three (3) specimens assessed under AS 1012.13 shall not exceed the specified value.

6 CONCRETE PLACEMENT

The Contractor shall be wholly responsible for the placing of the concrete in accordance with the Specification and the associated contract documents and in such a manner that the performance requirements set out in the Specification are met.

6.1 TEMPERATURE CONTROL

6.1.1 Hot Weather Concreting

When it is likely that an ambient air temperature of greater than 32°C may occur during concrete placement, the reinforcement shall be adequately cooled such that the temperature of the reinforcement is not above 32°C at the time of concrete placement. The forms shall be adequately cooled such that the temperature of the form faces are not above 32°C at the time of concrete placement.

6.1.2 Cold Weather Concreting

When it is likely that an ambient air temperature of less than 5°C may occur during concrete placement, the reinforcement shall be heated such that the temperature of the reinforcement is not below 5°C at the time of concrete placement. The forms shall be heated such that the temperature of the form faces are not below 5°C at the time of the concrete placement.

6.2 TRANSPORTING

The concrete shall be transported from the discharge point of the ready-mixed truck to its final position as rapidly as possible by means that will prevent segregation or loss of materials and contamination and in such a way that the proper placing and compaction of the concrete will not be adversely affected.

6.3 PLACING

The concrete shall not be placed at a time or under such conditions that will not permit the standard of concrete required by this section of the Specification to be attained.

The concrete shall be placed in such a manner as to avoid segregation or loss of materials. For tall vertical elements the maximum fall of concrete shall be limited to 900mm/100mm of minimum member thickness. As required, the Contractor shall deposit the concrete through enclosed chutes, or through access hatches as permitted by the Superintendent. These chutes shall be kept as vertical as possible and shall be kept as far as practicable full of concrete with their lower ends immersed in the newly placed concrete. The depositing of a large quantity of concrete at any point, with the intention of moving it along the forms, will not be permitted. The use of clean troughs, chutes, and pipes to aid in depositing concrete to its final position shall be permitted provided that they are kept clean and free of any coating of hardened concrete. The use of pumps and pneumatic equipment will be permitted only if approved by the Superintendent. The use of water to facilitate the movement of concrete along the trough, chutes or pipes shall not be permitted.

The concrete placing shall be carried out continuously between construction joints and in such a manner that a plastic edge is maintained. Where the location of construction joints is shown on the contract drawings, the construction joints shall neither be relocated nor eliminated without the approval of the Superintendent.

Before concrete is deposited against hardened concrete at construction joints the joint surface of the hardened concrete shall be thoroughly scabbled and cleaned so that all loose or soft material, all foreign matter and all laitance are removed.

The concrete shall be placed in horizontal layers not more than 300mm thick and each layer shall be compacted before the proceeding layer has taken its initial set.

Concrete shall not be placed in wet trenches, or in running water.

6.4 COMPACTION

The concrete shall be thoroughly compacted by means of mechanical vibration and hand methods and shall be carefully worked around the reinforcement and embedded fixtures, under waterstops and into the corners of the formwork.

The coarse aggregate shall be worked back from the forms so as to bring a full surface of mortar against the form without the formation of excessive surface voids. The compaction shall be such that all air or stone pockets that may cause honeycombing, pitting or places of weakness are eliminated. Where specific off-form surfaces are specified, it will be necessary for the Contractor to ensure uniform compaction procedures and times and to implement high quality concreting techniques. Vibrators shall not be used to transport concrete within the forms and shall not be placed in contact with freshly hardened non-plastic concrete or reinforcement that is embedded in it. Vibrators shall be capable of transmitting vibration to the concrete at frequencies between 8,000 to 12,000 impulses per minute and shall visibly affect the concrete at a radius of 300mm.

The Contractor shall provide at least one vibrator for each 50m³ of concrete placed per hour with a minimum of 2 vibrators.

Form vibrators shall be used only with the approval of the Superintendent.

6.5 CONCRETE PUMPING

Pumping shall be used for placing concrete only with the approval of the Superintendent. The Contractor shall ensure that the equipment to be used will permit the concrete to be placed with the properties specified under the performance requirements of the Specification. The Contractor shall be responsible for the proper disposal of surplus concrete.

6.6 FINISHES TO UNFORMED CONCRETE SURFACES

The Contractor shall be responsible for the provision of the finishes in accordance with the Specification and the associated Contract documents, and for the preparation of the unformed concrete surfaces to ensure the integrity of finish and the concrete member.

Minimum standard unformed structural finishes are presented. Where other Contract documents specify a standard superior to minimum structural requirements, then those Contract documents shall take precedence.

Schedule of Unformed Finishes as Laid

Concrete Element	Typical Applied Finish	Concrete Surface Finish
Slabs not set down	Concrete/Carpet/Vinyl	Broom Finish
Slabs set down	Tiles	Wood Float Finish
Slabs set down	Concrete	Broom Finish
Pilecaps	N/A	Wood Float Finish

6.6.1 Finishes As Laid

The finishes described in the following sub-clauses are those produced by the working of the surface of the concrete while it is still in its plastic condition. The finishes described relate to the minimum standard structural requirements of the unformed concrete surfaces, and do not attempt to describe more elaborate finishes that may be specified in the contract documents. Concrete surfaces shall be finished integral with the floor slab in one operation, where scheduled.

6.6.1.1 Screeded Finish

The top surface of the concrete may be left in a "screeded" condition in the areas where no higher degree of finish (floated, steel trowelled, etc.,) is required. Screeding shall mean that the concrete has been placed, struck off, consolidated, and levelled. The screeded surface shall have a level tolerance of +12mm and -6mm.

Scabble all hardened surfaces as necessary prior to placing applied finishes.

6.6.1.2 Floated Finish

After screeding, the concrete shall not be worked further until ready for floating. Floating shall not be started until the moisture film has disappeared from the surface and the concrete has hardened enough to prevent excess fine material and water from being worked to the surface. Floating pushes the aggregate into the concrete mass, raises the cement matrix to the concrete surface, and shall result in a uniform, smooth, granular texture. All high spots shall be cut down and all low spots filled during this procedure.

Floating can be undertaken with power-driven and/or hand floats

Unless specified otherwise, the finished surface shall have a degree of variation not greater than 13mm when measured with a 3-metre straight edge. If measured and assessed with an F-Meter, $F_F \geq 20$, $F_L \geq 15$.

6.6.1.3 Broom Finish

After floating, draw a broom or hessian belt across the surface to produce a coarse, even-textured, slip-resistant, transverse-scored surface. The finished surface shall have a degree of variation not greater than that of the preceding floated finish.

6.6.1.4 Steel Trowelled Finish

Steel trowelled finishing shall not commence until all bleed water has evaporated after the preceding floating operation. The surface shall be re-trowelled as many times as necessary to obtain a hard, glossy appearance that is free from defects and trowel marks and be uniform in texture and appearance. The final trowelling shall be at such a time that considerable pressure is necessary to make any impression on the surface. Under no circumstances shall Portland cement or other driers be sprinkled onto the surface and trowelled in to absorb surplus water. Any laitance brought to the surface by compaction or trowelling shall be removed without disturbing coarse aggregate. Steel trowelling can be undertaken with power-driven and/or hand trowels.

Unless specified otherwise, the finished surface shall have a degree of variation not greater than 10mm when measured with a 3-metre straight edge. If measured and assessed with an F-Meter, $F_F \geq 25$, $F_L \geq 20$.

All defects, joints and concrete discontinuities are to be ground flush to the approval of the Superintendent.

6.6.1.5 Other finishes

The provision of other finishes shall be the responsibility of the Contractor and shall conform to the requirements of the Contract documents.

6.6.2 Applied Monolithic Finishes

The provision of finishes produced by the application of cementitious toppings or other finishes to the surface of the unformed concrete while it is still in its plastic condition shall be the responsibility of the Contractor, and such works shall conform to the Contract documents. The provision of such finishes shall in no way have a detrimental effect on the concrete properties as required by the Specification.

6.6.3 Applied Separate Finishes

The provision of finishes produced by the application of separate cementitious toppings and/or other finishes to the surfaces of the hardened, unformed concrete shall be the responsibility of the Contractor, and such works shall conform to the contract documents. The provision of such finishes shall in no way have a detrimental effect on the concrete properties as required by the Specification.

6.6.4 Tolerances

The surfaces of all finishes to unformed concrete shall be true planes within the tolerances as specified in the Contract documents for the type of finished specified.

The reductions from any specified height, plan, or cross-sectional dimension shall not exceed 1/200 times the required dimension or 5mm, whichever is greater. Greater dimensions may be accepted for unformed members when the excess dimension will not affect the performance of the members or the setout and alignment of the structure.

6.7 FINISHES TO FORMED CONCRETE SURFACES

The Contractor shall be responsible for the provision of the finishes in accordance with the Specification and the associated Contract documents, and for the preparation of the formed concrete surfaces so as to ensure the integrity of finish and the concrete member.

Finishes shall be to the requirements of AS 3610.1, except as modified by the Specification. Unless specified otherwise, the minimum standard of finish shall be Class 3- General Engineering Work.

6.7.1 Schedule of Formed Finishes

The formed surfaces of each concrete member shall be finished to at least a minimum standard in accordance with the schedules of [Table 3](#) and the relevant contract drawings.

Where the Contract documents require a better standard than minimum structural requirements, then the Contract documents shall take precedence.

6.7.2 Applied Separate Finishes

The provision of finishes produced by the application of separate cementitious and/or other finishes to the surfaces of the hardened off-form concrete shall be the responsibility of the Contractor, and such works shall conform to the contract documents. The provision of such finishes shall in no way have a detrimental effect on the concrete properties as required by the Specification.

6.7.3 Treatment of Form-Tie Holes

Unless shown otherwise on the drawings, all form-tie holes shall be grouted flush with the concrete surface and such as to provide a minimum cover to the embedded tie of 55mm to exposed concrete surfaces and 35mm to protected concrete surfaces.

6.8 CURING AND PROTECTION

Freshly cast concrete shall be protected from premature drying and excessively hot or cold temperatures. In windy conditions windbreaks shall be erected to shield the concrete surfaces during and after placement. The concrete shall be maintained at a reasonable constant temperature with minimum moisture loss for the curing period. Curing methods that do not conform to the requirements of the Specification shall not be used without the prior approval of the Superintendent.

6.8.1 Curing Methods for Normal Conditions

During the curing period, one of the following methods shall be adopted by the Contractor for the curing of the unformed surfaces of each concrete member. Where formed surfaces are exposed during the curing period then these also shall be cured by one of these methods for the remainder of the curing period.

- (a) Ponding or continuous sprinkling with water.
- (b) The use of an absorptive cover kept continuously wet.
- (c) The use of an impermeable sheet membrane over a moistened surface fixed and lapped so that no air circulation can occur at the concrete surface.
- (d) The use of curing compounds conforming to AS 3799, Liquid membrane-forming curing compounds for concrete.

Slab and beam soffits, where exposed by stripping prior to completion of the curing period, are to receive two coats of an approved curing compound. Curing compounds shall not be detrimental to the application of subsequent finishes.

6.8.2 Hot Weather Curing Methods

When the temperature of the surrounding air during concreting and/or curing is higher than 32°C, the concrete shall be cured only by means of curing methods (a), (b) or (d).

Immediately after placement, cover the concrete with an impervious membrane, or hessian kept wet, until curing begins. As an alternative to immediate covering, where the temperature exceeds 25°C, or where not protected against drying winds, protect the concrete with a fog spray application of aliphatic alcohol evaporation retardant, and then cure as above.

6.8.3 Cold Weather Curing Methods

Precautions shall be taken to prevent the plastic concrete from freezing at any time. When the temperature of the surrounding air during curing is less than 5°C, the temperature of the concrete shall be maintained at a temperature between 5°C and 20°C for the required curing period. Salts or chemicals shall not be used for the prevention of freezing.

6.8.4 Curing Period

For normal Portland cement or blended cement concrete, curing shall commence immediately after initial set of the concrete and shall continue until the concrete has attained 75% of its specified characteristic strength, and for a minimum period of seven (7) cumulative days during which the temperature of the air in contact with the concrete is above 10°C. For concrete made with high early strength cement the curing shall continue for a minimum of three (3) cumulative days during which the temperature of the air in contact with the concrete is above 10°C. Rapid drying

out at the end of the curing period shall be prevented.

6.8.5 Curing Compounds

Where curing compounds permitted by the Specification are used, they shall be applied in accordance with the Manufacturer's instructions and shall not be used on any surface until the successful completion, or evidence, of the following tests: -

- (a) Tests for curing efficiency
- (b) Tests to prove that discolouration of off-form or other special surfaces will not occur due to the compounds or interaction between them and any additive, form coatings or release agents.
- (c) Tests to show that the compounds will not adversely affect the adhesion of any applied concrete finish.

6.8.6 Concrete Protection

6.8.6.1 Loads

The concrete shall be protected from damage due to load overstress, heavy shocks, and excessive vibrations. Construction loads shall not be placed on self-supporting structures that will overstress them. The Contractor shall provide calculations for examination by the Superintendent to justify the adequacy of the structure to sustain any construction loads.

6.8.6.2 Surface Protection

All finished concrete surfaces shall be protected from damage from any cause such as construction equipment, materials, or methods and by rain, running water or wind.

Completed off-form concrete surfaces shall be protected from mortar splashes during subsequent pours by fitting a suitable protection apron to the forms prior to placing subsequent concrete or by other equivalent means.

Starter bars, miscellaneous metal work and other exposed reinforcement shall be protected to prevent rusting and the subsequent staining of completed concrete surfaces caused by water run-off. Timber used in contact with a completed surface shall be plastic wrapped or equivalently protected. Timber debris shall be cleared from areas where run-off on to finished concrete can occur. The area of any pour shall be checked to ensure that all debris, pieces of metal reinforcement and timber off-cuts, shavings and sawdust have been removed. Chemical and other stain removal methods shall not be used as an alternative method to prevention of stains on finished concrete surfaces.

6.9 PENETRATIONS, EMBEDDED SERVICES AND FIXINGS

The provision of penetrations, embedments and fixings shall be in accordance with the requirements of AS 3600, except as modified by the Specification. The Contractor shall be responsible for co-ordinating the core and embedment requirements of all trades and for the provision of them in accordance with the requirements of the Contract documents.

6.9.1 Location And Details

Where the location and details of penetrations, embedments and fixings are shown on the structural drawings of the Contract documents, then such shall be followed. Where such information is not shown, then the Contractor shall submit the complete requirements of the coordinated trades to the Superintendent for approval.

Unless shown otherwise on the contract drawings, penetrations, embedded services, and fixings shall be fixed and maintained in their correct position to within a tolerance of 6mm.

6.9.2 Integrity of Concrete and Reinforcement

Reinforcement shall not be cut to provide space for penetrations or embedments, nor shall the hardened concrete be cut or cored without the approval of the Superintendent.

Cover to reinforcement and permanent concrete surfaces from the outside of penetrations or embedded services and fixings shall conform to all applicable Clauses of AS 3600.

6.9.3 Penetrations, Embedded Services, Down Pipes Etc

All penetrations shall be formed with adequate forms and securely held in the correct position during concreting. Where holes for services are to be sealed with concrete, a rebate shall be formed in the vertical surface of the core hole.

Where the columns have downpipes cast into their centre, the Contractor shall ensure that pipes are securely held in position and are not damaged during the placing of concrete.

Embedded service lines other than those passing directly through a concrete element shall not be larger in outside diameter than one-third of the minimum dimension of the concrete element in which they are embedded. They shall be located between opposing face reinforcement layers, with a minimum cover of 50mm and spaced no closer than three diameters centre to centre. Approval for embedded services not shown specifically on the concrete contract documentation must be obtained from the Superintendent.

Embedded pipes which are intended to contain liquid, gas or vapour under pressure or extremes of temperature shall conform to AS 3600. Pipes with maximum pressures exceeding 2000 kPa shall not be embedded in concrete.

6.9.4 Embedded Inserts, Anchor Bolts, Fixings

Fixings, including holding down bolts, inserts and ferrules shall conform to AS3600.

Embedded inserts other than those directly passing through a concrete element shall not be larger in outside diameter than one-third of the minimum dimension of the concrete member in which they are embedded, nor shall they be spaced closer than three diameters centre to centre. Approvals for these embedded inserts must still be obtained from the Superintendent.

Inserts, anchor bolts and embedded fixings shall be galvanised unless otherwise specified on the contract drawings or specified under their particular trade.

Threads shall be greased, and all embedded items shall be covered and protected against damage.

6.10 JOINTS AND JOINTING

Joints are generally shown on the contract drawings. Where such joints are shown they shall not be eliminated or varied in location without prior approval from the Superintendent. Where the Contractor requires additional joints, approval must be sought for them from the Superintendent before including them.

6.10.1 Types Of Joints

Specific details of the jointing types shall be as shown on the contract drawings.

Any surface at which casting of a member is terminated and against which concrete is later directly placed shall be termed a cold construction Joint. Unless specified otherwise, the existing joint surface to a cold construction joint shall be scabbled to provide a surface roughness of a minimum of 6mm amplitude.

6.10.2 Water Tightness

All joints in the concrete that may be subjected to the ingress of water shall be made watertight.

6.10.3 Emergency Joints

When the placing of concrete is unexpectedly interrupted it may be necessary for the Contractor to provide an emergency cold construction joint. The location and construction of the joint shall be to the approval of the Superintendent, but in no way shall the strength of the structure be impaired by such a provision.

6.10.4 Joint Finish

The finish to all joints shall be in accordance with the details shown on the contract drawings. The finish to all jointing shall be smooth and flush with the adjoining concrete surfaces. Any such edges that fail to meet the standards specified shall be rejected and rectified by replacing the section of the concrete by sawing and dressing. No patching will be permitted. Refer to [Table 2](#) of this section of the Specification for joint finish requirements.

6.10.5 Dimensional Tolerances

The maximum absolute and relative deviation of a joint from its true position in space shall be in accordance with the requirements of [Table 2](#) of this section of the Specification.

6.10.6 Treatment Of Joint Surfaces

All joints shall be clean and dry before any jointing material is applied.

6.10.7 Period Between Pours

6.10.7.1 General

In order to minimise shrinkage effects of the concrete, the Contract drawings and the Specification may require certain minimum periods to elapse between adjacent pours of concrete at joints. These periods shall not be varied without the approval of the Superintendent. Where time periods between pours are not indicated in the contract documents the Contractor shall submit his requirements in this regard to the Superintendent for examination and approval.

6.10.7.2 Time Delays

The time delay between concrete pours abutting vertical construction joints in walls shall not be less than three (3) days. The time delay between concrete pours abutting horizontal construction joints in walls shall not be less than three (3) days. The time delay between "pour strip" concrete and adjoining concrete shall not be less than twenty-eight (28) days.

6.10.8 Jointing Materials

Various control joints within the concrete structure may be filled with joint-filler and sealant as shown on the Contract documents. Product substitution can only be made with the approval of the Superintendent.

Proprietary jointing systems may have been selected to meet advertised performance characteristics, and any proposed substitutions must be to the approval by the Superintendent.

6.10.9 Slip Joints & Bearing Pads

The Contractor shall supply and install all proprietary slip joints and bearing pads required under the Specification and/or as shown in the Contract documents.

6.11 WATER STOPS, BARS, UNDERLAYS AND MEMBRANES

The Contractor shall be wholly responsible for the selection, supply, location and fixing of the water stops or water bars so that water tightness at all relevant joints is ensured and the requirements of the Specification are met. The Contractor shall provide suitable bases, working bases and waterproofing underlays or membranes to concrete slabs laid on ground, of the types shown on the documents and specified here.

6.11.1 Location And Extent

Water stops, water bars, underlays and membranes shall be installed where shown in the contract documents. Nevertheless, wherever ingress of water into a compartment may occur through a joint in a concrete element then such a joint shall be provided with a water stop or water bar. Install water stops to all construction joints in plant room floors.

6.11.2 Shop Drawings

Shop Drawings shall be prepared by the Contractor and submitted for review by the Superintendent prior to the installation of the water stops or water bars. These shop drawings shall show the construction of the water stops and water bars and the location and details of all stops, weld joints, splices, and supports.

6.11.3 Water Stops and Water Bars

The type of water stops and water bars shall be as shown on the contract drawings and/or as required by the relevant Manufacturers. Water stops and water bars shall be manufactured from polyvinyl chloride or other approved materials.

6.11.3.1 Materials - Polyvinyl Chloride

This material shall be a high-grade virgin compound of P.V.C. containing no reclaimed or scrap material. It shall comply with the following parameters: -

PROPERTIES AT 25°C

Tensile strength	15MPa
Elongation at break	285% (min.)
B.S. softness (B.S.S. 2571/1955)	42-52
Water absorption (total immersion in distilled water for 48 hrs at 50°C)	0.6%
Cold crack temperature	not higher than -25°C

Accelerated Extraction Test

Retention of initial tensile strength	not less than 85%
Retention of initial elongation at break	not less than 85%

Stability in Effect of Alkalis Test

Weight gain after 7 days	not more than 0.25%
Weight gain after 30 days	not more than 0.50%

6.11.3.2 Installation

Water stops and water bars shall be securely supported in a manner that will ensure their location in the correct position during concreting. Neither their location or support shall inhibit the proper placing and compaction of the concrete, nor shall any reinforcement be disturbed or displaced by them.

Internal water stops in horizontal joints, placed in vertical position, shall be securely wired into position. After screeding of the concrete to final level, the water stop or water bar shall be immediately checked to ensure that it is fully bedded in the concrete and in a vertical position.

Internal water stops in vertical formed joints, shall be sandwiched in the formwork with the projecting edge being securely wired to prevent lateral movement during pouring of the concrete.

Special care shall be taken to ensure that the water stop is not dislodged by vibration.

External rear guard water stops shall be fixed securely to the face of the formwork and the formwork shall extend past the joint sufficiently to provide support for the full width of the water stop. After screeding of slab concrete in the first pour, the water stop shall be immediately checked to ensure that the embedded part is in contact with dense concrete.

6.11.4 Underlays And Membranes

6.11.4.1 Material

Unless approved otherwise, underlays and membranes shall be high-impact resistant polyethylene film with a minimum thickness of 0.2mm.

6.11.4.2 Base Preparation

Provide a working base of platform material, unless otherwise shown on the documents or approved by the Superintendent. Provide an even surface free of any projections likely to damage film underlays and adequate to provide a firm base suitable for reinforcement supports, or any other items to be supported.

6.11.4.3 Installation

Lay the film over the base and join with lap joints not less than 200 mm. Face the laps away from the direction of concrete pour. Seal laps with adhesive tape not inferior to double sided butyl adhesive tape. Similarly seal around unavoidable penetrations such as service pipes and the like.

Take the underlay up vertical faces as far as the damp proof course where applicable, and fix at the top by tape sealing. Arrange to have vertical laps only join on vertical or inclined surfaces. Patch or seal any punctures or tears before pouring concrete.

6.12 OTHER REJECTION CRITERIA

Hardened concrete shall also be liable to rejection if any of the following defects occur:

- a) The concrete is porous, segregated or honey-combed
- b) A construction joint has been located or constructed in a manner not in accordance with this Specification
- c) The specified construction tolerances have not been met
- d) Reinforcement steel has been displaced from its correct location
- e) Waterstops, inserts and/or other concrete embedded items have been displaced from their correct position
- f) The specified surface finish has not been achieved
- g) The concrete work can be shown to be otherwise defective.

7 POST-INSTALLED FIXINGS

7.1 DRILLED AND EPOXIED REINFORCEMENT

7.1.1 General

Where detailed on the design drawings, drilled and epoxied reinforcement starters bars shall be installed strictly in accordance with the details. Installation of drilled and epoxied reinforcement is to be in accordance with the selected manufacturer's recommendations and product instructions.

The substitution of detailed reinforcement connections with drilled and epoxied reinforcing starter bars shall only be permitted with the express approval of the Superintendent. No bars greater than 32mm diameter shall be installed using a drill and epoxy method.

7.1.2 Drill and Epoxy Systems

Unless noted otherwise on the design drawings, epoxy anchoring systems shall be **Ramset Epcon C8** or **Hilti HIT-RE500V3**. Both systems have higher bond capacities and are better able to cope with wet and cracked concrete, however their shorter times to initial set should be considered. The use of alternative epoxy anchoring systems will require the approval of the Superintendent.

7.1.3 Installation

Installation of drilled and epoxied reinforcement shall only be undertaken by personnel who have been trained in the proper methods of drilling, cleaning, injection, and insertion of post installed reinforcement. Such training is required to have been conducted by the respective manufacturers of the drill and epoxy system that has been selected for use, and the personnel shall be familiar with the particular documented requirements of installation of the selected manufacturer of the system utilised.

7.1.4 Bore Hole Drilling

Unless approved otherwise, all bore holes for reinforcement bars up to N24 shall be drilled using the following:

- The Hilti SAFEset system utilizing TE-YD hollow drill bits with vacuum extraction (a self-cleaning system)
- or
- The Ramset R3 Max Dustless system with vacuum extraction (a self-cleaning system)

For reinforcement bars greater than N24, all bore holes shall be drilled with hammer drills unless approved otherwise.

If reinforcement is encountered during drilling, the bore hole must be relocated, and no reinforcement shall be cut. Bore holes that have been commenced but discontinued shall be filled with a low shrink cementitious grout with a minimum compressive strength of 50MPa.

Drilled bore holes must be aligned with the design orientation of the reinforcement starter bars, unless specified or approved otherwise.

7.1.5 Bore Hole Cleaning

All holes drilled with the Hilti SAFEset system, or Ramset Dustless system, utilizing vacuum extraction, shall require no further cleaning

All holes drilled with standard hammer drilling shall be cleaned utilizing either the Manual Cleaning (MC) or Compressed Air Cleaning (CAC) methods. All holes 20mm diameter or greater shall require CAC. All holes greater than 200mm depth shall require CAC.

Manual Cleaning (MC) shall consist of the following entire procedural sequence after completion of drilling to the designated depth:

1. Use a manual pump to blow out from the back of the hole a minimum of 4 times, and until the return air stream is free of noticeable dust
2. Brush 3 times with a steel brush with a diameter greater than equal to the hole diameter. The brush must experience natural resistance and must extend to the back of the hole with each stroke. A brushing stroke shall consist of a twisting and removal action
3. Use a manual pump to blow out from the back of the hole a minimum of 4 times, and until the return air stream is free of noticeable dust
4. Brush 3 times with a steel brush from the back of the hole using a twisting and removal action
5. Use a manual pump to blow out from the back of the hole a minimum of 4 times, and until the return air stream is free of noticeable dust

Compressed Air Cleaning (CAC) shall consist of the following entire procedural sequence after completion of drilling to the designated depth:

1. Blow twice from the back of the hole with oil-free compressed air until the return air stream is free of noticeable dust. The compressed air shall be supplied at a minimum of 6 bar at 6 m³/hr
2. Brush 2 times with a steel brush with a diameter greater than equal to the hole diameter. The brush must experience natural resistance and must extend to the back of the hole with each stroke. A brushing stroke shall consist of a twisting and removal action
3. Use compressed air to blow out from the back of the hole a minimum of 2 times, and until the return air stream is free of noticeable dust

All holes drilled with diamond coring shall be cleaned utilizing the following entire procedural sequence:

1. Flush the hole twice by inserting a water hose to the back of the hole, until the water runs clear
2. Brush 2 times with a steel brush with a diameter greater than equal to the hole diameter. The brush must experience natural resistance and must extend to the back of the hole with each stroke. A brushing stroke shall consist of a twisting and removal action
3. Flush the hole twice by inserting a water hose to the back of the hole, until the water runs clear
4. Blow twice from the back of the hole with oil-free compressed air until the return air stream is free of noticeable dust. The compressed air shall be supplied at a minimum of 6 bar at 6 m³/hr
5. Brush 2 times with a steel brush from the back of the hole using a twisting and removal action
6. Use compressed air to blow out from the back of the hole a minimum of 2 times, and until the return air stream is free of noticeable dust

7.1.6 Hole Injection

The filling of holes with epoxy shall be in accordance with the manufacturer's recommendations. Horizontal and overhead fixings shall be installed such that there is no loss of epoxy under gravity during installation.

Injection will start from the back of the hole, and piston plugs shall be used for holes greater than 250mm deep and all overhead applications. The procedure adopted shall prevent the creation of air voids within the epoxy.

7.1.7 Installation of Reinforcement

Reinforcement to be installed shall be marked to ensure the required embedment is achieved.

Insertion should be undertaken by turning the bar as it is gently pushed to the back of the borehole. The insertion of the reinforcement bar should ensure that the annular gap around the bar is completely filled with epoxy, this being evidenced by excess epoxy flow from the borehole as the bar approaches full insertion.

As required, the inserted bar shall be supported in its desired position and orientation until epoxy initial set.

Unless noted otherwise on the design drawings, the depth of the bore hole and embedment of the reinforcing bar(s) shall be in accordance with the epoxy manufacturer's specification but not less than the minimum depths given in Table 10.1, unless the bore hole depths have been refined and advised by the structural engineer in accordance

with the specifics of the installation required.

Table 10.1

Deformed Bar (mm)	Minimum Hole Diameter (mm)	Embedment Depth (mm)
N12	16	300
N16	20	430
N20	25	560
N24	30	700
N28	35	850

Table 10.1 is based on the following fixing parameters:

- Reinforcement development to AS 3600 is required
- Minimum concrete strength 32MPa
- Concrete is dry
- Minimum cover 3 x bar diameter
- Minimum bar spacing 7 x bar diameter
- Full yield stress of bar is required (500MPa)

Deviations from the above minimum parameters will require the specific input of the structural engineer through the Superintendent.

7.1.8 Testing

Load testing of drilled and epoxied post-installed reinforcement shall be as specified and scheduled. Where no testing is specified, the Sub-contractor shall provide documented evidence of conformance to all requirements of this section of the specification.

Where proof of conformance cannot be presented, or deviation from the specified parameters and procedures are witnessed, then proof of the capacity of the post installed fixings to resist their design loads will be required and requested. Such validation can be achieved through various means, as follows:

- SWL load testing of at least 10% of post installed reinforcement fixings
- Certification from a licensed installer of the selected drill and epoxy installations

TABLE 1 - CONCRETE TYPES AND PERFORMANCE REQUIREMENTS

Element Exposure, Classification	CONCRETE MATERIALS						PERFORMANCE REQUIREMENTS					
	Cement Types	Cementitious Content (kg/m ³)	Flyash % of Cementitious Content	Nominal Maximum Aggregate Size (mm)	Nominal w/c ratio	Concrete Admixtures	Characteristic Strengths (MPa)			Slump (mm)	56 Day Shrinkage Test Results (*10 ⁻⁶)	Strength at Transfer f'cp (MPa)
							Compression f'c	Flexural Tension f'cf	Principal Tension f'ct			
Blinding Concrete	GP/GB	275	40%	20	0.60	N/A	10/20	N/A	N/A	80 +/- 15	N/A	N/A
A1, A2 General purpose concrete	GP/GB	270	25%	20	0.50	As Approved	25/32	N/A	N/A	80 +/- 15	<1000	N/A
B1 Internal or external concrete	GP/GB	400	25%	20	0.45	As Approved	40	N/A	N/A	80 +/- 15	+/- 600	N/A
B2 Internal B1 External	GP/GB	350	25%	20	0.45	As Approved	40	N/A	N/A	80 +/-15	+/- 600	N/A
C External concrete	GP/GB	470	25%	20	0.45	As Approved	50	N/A	N/A	80 +/- 15	<1000	N/A
Block Fill	GP/GB	300	40%	10	0.60	N/A	20	N/A	N/A	230 +/- 40	N/A	N/A
<p>These values that are to be regarded as a guide only for the Contractor in achieving the design parameters specified on the Contract drawings. The Contractor shall be wholly responsible for the design mixes used to achieve the specified parameters. * The values indicated are requirements that must be met</p>							<p>These are values that are linked to the design parameters specified on the Contract Drawings. These parameters may be tested for compliance and will constitute grounds for non-acceptance of concrete mixes.</p>					

TABLE 2 - DIMENSIONAL TOLERANCES - CAST-IN-SITU CONCRETE

Concrete Element, Title, Location	Category, Class and/or Typical Usage	Maximum Deviation from Correct Position	Relative Deviation from Correct Position	Maximum Misalignment			
				Between Pours	Between Face Linings	Fin	Recesses
All above ground exposed concrete elements	Off-Form, Class 2, Typical Architectural concrete	15mm	1 in 300 or 2.5mm	2mm	2mm	2mm	2mm
All above ground concealed concrete elements	Off-Form, Class 3, General engineering work	20mm	1 in 200 or 3.5mm	3mm	3mm	2mm	3mm
Footings and underside of ground slabs	Class 4, Rendered or hidden concrete	25mm	1 in 150	4mm	4mm	4mm	4mm

TABLE 3 - FORMWORK FINISHES

Concrete Element, Title, Location	Category and/or Typical Usage	Surface Finish Class to AS3610.1 (Generally)	Colour Uniformity, Tonal Range	Type Of Form Lining	Joint Type	Water-proofness Of Forms
All above ground exposed concrete elements	Off-Form, Typical Architectural concrete	2	5 tones, absorbent and consistent	Non-jointed and waterproof	Butt	Yes
All above ground concealed concrete elements	Off-Form, General engineering work	3	Not applicable	Non-absorbent	Slurry-proof	No
Footings and underside of ground slabs	Rendered or hidden concrete	4	Not applicable	Not limited	Slurry-proof	No

This table of formwork finishes describes expected standards of finish for normal type building projects. Refer to the Schedule of Formed Finishes for more specific or stringent requirements.

TABLE 4 - TABLE OF RECOMMENDED MINIMUM STRIPPING TIMES

Member Type	Member	Effective Span (m)	Member stripping time for average daily air temperature during period prior to stripping (days)			
			Hot ($\geq 21^{\circ}\text{C}$)	Average ($13\text{-}20^{\circ}\text{C}$)	Cold ($5\text{-}12^{\circ}\text{C}$)	Severe Cold ($< 5^{\circ}\text{C}$)
Vertical and unloaded	Wall, column, beam sides	Not applicable	1	2	3	7
Vertical and loaded	Wall, column, load bearing structure	Not applicable	2	3	5	9
Horizontal	Slab soffit	< 3 metres	4	6	8	14
		3 - 6 metres	12	18	24	28
		> 6 metres	18	24	28	28
Horizontal	Beam soffit	< 3 metres	4	6	8	14
		> 3 metres	12	18	24	28

Notes:

This table is applicable only to reinforced slab and beam systems. The stripping times for pre-stressed slab/beam systems should be developed in consultation with the pre-stressing designer and concrete supplier

Effective span is the maximum distance between supports (either temporary or permanent)

This Table is based on superimposed construction loads not exceeding 2.0kPa in the case of slabs.

The concrete is of normal class as defined in AS3600, and either:

(i) the 3-day average compression strength equals or exceeds 45% f_c

OR

(ii) the 7-day average compression strength equals or exceeds 75% f_c



GENERAL SPECIFICATION (STANDARD RISK)

Taroom Sewage Treatment Plant - Civil Works

CONTRACT NO: T2425.13

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1. THE SPECIFICATION

- 1.1 **(Documents comprising the specification)** The specification comprises the following documents:
- (a) the Sope (include all the relevant documents in this tender)
 - (b) this General Specification;
 - (c) other documents to the extent that they are incorporated (whether physically or by reference) into the specification, namely:
 - (i) Water Services Association of Australia (WSAA) standard specification;
 - (ii) relevant Australian Standards;
 - (iii) Principal's Policies and Procedures;
- 1.2 **(Precedence of documents comprising specification)** The documents comprising the specification shall be taken to be mutually explanatory. If there is any ambiguity, inconsistency, conflict or discrepancy between any of the documents listed in clause 1.1 then the documents will take precedence in the order set out in clause 1.1, with the document listed at 1.1(a) being the highest in the order.
- 1.3 **(Documents incorporated by reference into specification)** The Contractor is deemed to have obtained copies of, read, understood, and allowed for compliance with the Specification (including any documents which are incorporated into it by reference only).

2. DEFINITIONS

- 2.1 **(Definitions)** Capitalised terms used in the General Specification have the meanings assigned to them in the General Conditions of Contract (if any) unless the context otherwise requires. Terms which are separately defined in a specific clause have the meanings assigned in those clauses. Otherwise, in the General Specification:
- (a) **Administrator** means, when used in or by reference to Department of Transport and Main Roads documents, the Superintendent;
 - (b) **Approvals** means certificates, licences, accreditations, clearances, authorisations, consents, permits, approvals, determinations, and permissions from any Authority and any related fees and charges;
 - (c) **Authority** means any Federal, State, or local government authority, administrative or judicial body or tribunal, department, commission, agency, government owned corporation, statutory body or instrumentality, or any other person having jurisdiction over the project;
 - (d) **General Conditions of Contract** means the General Conditions of Contract referred to in the formal instrument of agreement to which this General Specification is attached;
 - (e) **General Specification** means this document and all attachments to it which forms part of the Contract;
 - (f) **Good Industry Practice** means:
 - (i) the standard of skill, care, and diligence; and
 - (ii) the practices, methods, techniques, and acts,of a skilled, competent, and experienced contractor engaged in the business of carrying out Work similar to the WUC;

- (g) **Principal** has the same meaning as given to the term “Principal” or “Purchaser” in the General Conditions of Contract (as the case may be);
- (h) **Principal’s Policies and Procedures** means the policies, procedures, codes, plans, guidelines, and the like provided or made available by or on behalf of the Principal to the Contractor from time to time, including those published on the Principal’s website which are in any way applicable to this Contract;
- (i) **Program** has the same meaning as given to the term “construction program” or “program” in the General Conditions of Contract (as the case may be);

3. CONTRACTOR’S GENERAL OBLIGATIONS, WARRANTIES AND REPRESENTATIONS

3.1 **(Ability)** The Contractor must ensure, and warrants and represents that the Contractor and, to the extent applicable to them, its Personnel:

- (a) have the experience, skills, expertise, and resources;
- (b) hold all necessary competencies, licences, accreditations, qualifications, permits, clearances, or other authorisations,

which are required for the Contractor to comply with its obligations under the Contract and will maintain such competencies, licences, accreditations, qualifications, permits, clearances, or other authorisations at all times until the Contractor has completed its obligations under the Contract.

3.2 **(Standard)** The Contractor must, and warrants and represents that it will, and to the extent applicable to them will ensure that its Personnel, carry out WUC and Contractor’s other obligations in connection with the Contract in accordance with Good Industry Practice.

3.3 **(Methodology)** The Contractor:

- (a) warrants and represents that the methodology for carrying out and completing WUC stated in the Contract is suitable, appropriate and adequate; and
- (b) must, and warrants and represents that it will, carry out and complete WUC in accordance with that methodology (if any) unless otherwise directed by the Superintendent or permitted or required under the Contract.

3.4 **(Goods)** The Contractor warrants and represents that all plant, equipment, materials, parts, consumables or other goods (“Goods”) supplied, used or installed as part of WUC shall:

- (a) at the time that they are supplied, used, or installed, be new;
- (b) be free from defects and of merchantable quality;
- (c) comply in all respects with the Contract including as to quality, quantity, performance, functionality and description;
- (d) conform to any sample goods approved by the Principal or Superintendent;
- (e) comply with any applicable requirement, code, guideline, policy, drawing, or specification included or incorporated by reference into the Contract or, if none is included or incorporated, any Australian Standards applicable to the Goods and any applicable Legislative Requirements; and
- (f) be suitable and adequate for the purposes for which they are supplied, used or installed.

3.5 **(Equipment)** The Contractor warrants and represents that:

- (a) the Equipment and all materials comprising the Equipment shall, at the time at which the Equipment is Delivered:
 - (i) be new, free from defects, and of merchantable quality;
 - (ii) comply in all respects with the Contract including as to quality, quantity, performance, functionality, and description;
 - (iii) conform to any sample goods approved by the Principal or Superintendent;
 - (iv) comply with any applicable requirement, code, guideline, policy, drawing, or specification included or incorporated by reference into the Contract or, if none is included or incorporated, any Australian standards applicable to the Equipment and any applicable Legislative Requirements; and
 - (v) be suitable and adequate for the purposes for which the Equipment is supplied.
- (b) all other plant, equipment, materials, parts, consumables or other goods ('Goods') supplied, used or installed as part of WUC shall:
 - (i) at the time that they are supplied, used, or installed, be new;
 - (ii) be free from defects and of merchantable quality;
 - (iii) comply in all respects with the Contract including as to quality, quantity, performance, functionality and description;
 - (iv) conform to any sample goods approved by the Principal or Superintendent;
 - (v) comply with any applicable requirement, code, guideline, policy, drawing, or specification included or incorporated by reference into the Contract or, if none is included or incorporated, any Australian Standards applicable to the Goods and any applicable Legislative Requirements; and
 - (vi) be suitable and adequate for the purposes for which they are supplied, used or installed.

3.6 **(Investigations)** The Contractor warrants and represents that the Contractor has:

- (a) carefully reviewed the Contract and all other information provided by the Principal to the Contractor for the purpose of WUC, and is satisfied that the Contract and other information is appropriate and adequate to enable the Contractor to comply with its obligations under the Contract;
- (b) inspected the Site;
- (c) familiarised itself with factors that could affect the ability of the Contractor to carry out WUC for the Contract Sum, including weather conditions and the availability of temporary access, temporary lighting, power, telephone services, water supply, waste disposal facilities and local labour.

3.7 **(Construction Plant)** The Contractor warrants and represents that all Construction Plant utilised in carrying out WUC shall be in good working condition, suitable and appropriate for the Work for which it is used, and compliant with all applicable Legislative Requirements.

3.8 **(Contractor Documents)** The Contractor warrants and represents that all Contractor Documents will:

- (a) comply with the requirements of the Contract and applicable law;
- (b) be consistent with or exceed applicable industry standards;

- (c) be of a standard and quality expected of a contractor using Good Industry Practice;
- (d) be suitable and adequate for the purpose for which they are provided.

In this clause, **Contractor Documents** means:

- (i) those records, reports, designs, specifications, certificates, plans (including management plans), procedures, manuals and other documents, whether electronic documents or hard copy format, required by the Contract to be handed over to the Principal by the Contractor; and
- (ii) all information advice, designs, calculations and recommendations in those documents;

but does not include those that are incomplete at the time at which the Principal exercises its rights under subclause 39.4 of the General Conditions of Contract or the Contractor exercises its rights under subclause 39.9 of the General Conditions of Contract);

4. CONTRACT MANAGEMENT

4.1 **(Contractor's Superintendence)** The Contractor shall provide all superintendence necessary for the proper fulfilment of the Contractor's obligations under the Contract, including, unless the Superintendent directs otherwise, a competent site manager and site foreman approved by the Superintendent (with such approval not to be unreasonably withheld). Unless otherwise agreed by the Superintendent, the site manager shall be the Contractor's representative under clause 22 of the General Conditions of Contract.

4.2 **(Requests for review and information)** The Superintendent will endeavor to provide a response and/or Direction in relation to a written request for information from the Contractor within 5 Business Days of receipt of such request. The response time will be dependent on the complex nature and or quantity of clarifications per information request submitted. The Contractor is encouraged to make recommendations and or suggestions for the Superintendent's consideration when submitting such requests.

4.3 **(Shop drawings)** The Contractor is deemed to have allowed for the time permitted by subclause 8.3 of the General Conditions for examination of workshop drawings in the Program. The Contractor must review and incorporate any comments received from the Principal or the Principal's nominated Personnel in relation to the workshop drawings. Unless otherwise directed, the Contractor is not required to (and must not) resubmit revised workshop drawings to the Principal or its Personnel.

Final structural steel shop drawings 'Issued For Fabrication' (IFF) must be submitted to the Superintendent for information/filing purposes only. The Contractor, as part of its own quality management procedures, must ensure that all previous comments have been incorporated. The Contractor is encouraged to submit the completed 3D model / CAD file along with the 2D PDF files to assist the Superintendent in the initial shop drawing review.

4.4 **(Direction by Principal or Superintendent)** The Principal shall not be bound by any verbal advice given or information furnished by any Personnel of the Principal or Superintendent in respect of the Contract. The Contractor must not accept instructions from any person other than the Superintendent and/or the Superintendent's Representative. The Contractor acknowledges and agrees that its obligations and liabilities in connection with the Contract are not affected by any:

- (a) receipt or review of, or comment or Direction on, a document submitted by the Contractor;
- (b) failure by the Principal or Superintendent to review, comment on, or give a Direction on any document submitted by the Contractor; or
- (c) failure by the Superintendent to give its approval pursuant to clause 8.3.

Before relying on the receipt, review, or comment by the Superintendent, or Principal, or complying with a Direction in relation to a document, the Contractor must notify the Superintendent in writing, if doing so will affect a warranty, representation or obligation of the Contractor under the Contract.

- 4.5 **(Code of Conduct)** In this clause, 'Code of Conduct' means the Principal's code of conduct which is available on the Principal's website. The Code of Conduct identifies the standards and behaviours expected from all workers, including contractors, in delivering services to the local community. The Contractor must:
- (a) communicate the Code of Conduct to all of the Contractor's Personnel;
 - (b) comply with, and ensure that its Personnel comply with, all requirements of the Code of Conduct, including all standards contained within the Code of Conduct; and
 - (c) if directed to do so by the Superintendent, obtain and provide to the Superintendent a signed form from all Personnel engaged by the Contractor to perform any part of WUC which states that the person has read, understood and agrees to comply with the Code of Conduct.

5. DESIGN

- 5.1 **(Standard of Design Documents)** The Design Documents must, unless the Superintendent otherwise directs, comply with AS 1100.101-1992: Technical Drawing – General as amended or replaced from time to time.
- 5.2 **(Principal's Project Requirements)** Without limiting any other obligation of the Contractor or right of the Principal, to the extent (if any) that the Principal's Project Requirements includes any drawings, specifications or other information, samples, models, patterns and the like provided by the Contractor ('Contractor's Tendered Design'), the Contractor warrants and represents that the Contractor's Tendered Design accords with the balance of the Principal's Project Requirements.
- 5.3 **(Suitability and adequacy of The Works)** The Contractor:
- (a) must ensure that at Practical Completion the Works are (and each part of The Works) is; and
 - (b) warrants and represents that The Works and each part of The Works will at Practical Completion, be,
- suitable and adequate for the purpose stated in or to be reasonably inferred from the Contract, or otherwise made known to the Contractor prior to the date of acceptance of tender.
- 5.4 **(Submission and review of Design Documents)** The Contractor must submit design documents to the Superintendent for review in accordance with Section 11 of the Technical Specification before carrying out WUC in reliance on the Design Documents and, at the times (if any) as identified.

The Principal shall advise the Contractor within a reasonable time as to whether it grants or refuses permission for the use of the Design Documents for the construction of The Works. The Contractor must not amend any Design Document for which the Principal has granted permission, unless the Contractor first obtains the Principal's written consent.

If the Principal refuses permission, the Principal shall provide reasons for the refusal in which case the Contractor must resubmit updated Design Documents to the Principal, together with a report which identifies how any comments from the Principal have been addressed in the Design Documents.

No review, permission, approval, consent, confirmation, comment, advice or the like given or withheld by, or on behalf of, the Principal in relation to any Contractor Document shall:

- (a) constitute an acceptance by the Principal or the Principal's Representative of any responsibility in connection with the WUC;
- (b) adversely affect any right of the Principal; or
- (c) relieve the Contractor from any of its responsibilities, obligations, or liabilities.

5.5 **(Consultant's design certificate)** The Contractor must, at the time of submission of Design Documents, give to the Superintendent a statutory declaration properly executed by a representative of the Contractor's design consultant in a position to verify the facts stated in the declaration, stating that the Design Documents in respect of which the declaration is issued:

- (a) have been prepared by Personnel of the Contractor that:
 - (i) have the experience, skills, expertise, and resources
 - (ii) hold all necessary competencies, licences, accreditations, qualifications, permits, clearances, or other authorisations,

required to undertake their part of the Contractor's Design Obligations; and
- (b) accord with the requirements of the Contract.

5.6 **(Consultant's design construction certificate)** The Contractor must, as a requirement of Practical Completion and whenever otherwise reasonably directed by the Principal, give to the Superintendent a statutory declaration properly executed by a representative of the Contractor's design consultant in a position to verify the facts stated in the declaration, stating that:

- (a) the consultant has:
 - (i) inspected the following parts of the Works described in the Design Documents listed in the appendix;
 - (ii) taken all reasonable steps to ascertain whether the Certified Works are in accordance with the Design Documents; and
- (b) to the extent ascertainable from that inspection and those steps, the Certified Works are in accordance with the Design Documents.

6. WORK BY OTHERS

6.1 **(Work by others)** The Work identified in Appendix A will be undertaken by others.

6.2 **(Obligation to cooperate)** The Contractor and its Personnel shall liaise, cooperate, and coordinate WUC with the Principal and any other Personnel of the Principal performing Work or services at the Site (including the Work identified in clause 6.1) so that, to the extent that it is within the control of the Contractor, WUC is coordinated and integrated with the Work and services performed by the Principal's Personnel. The Contractor must use all reasonable endeavours to avoid interference with, or disruption to, or delay to WUC, to the Work identified in clause 6.1, and to any other Work or services undertaken by the Principal's Personnel at the Site. The Contractor must keep the Superintendent informed on all matters involving such coordination.

6.3 **(No claim by Contractor)** Notwithstanding anything else in the Contract, the Principal shall not be liable upon any Claim (including a claim for delay costs under the General Conditions of Contract) arising as a consequence of any interference with, or disruption or delay to, WUC or

any of the Contractor's obligations under this Contract, caused or contributed to by a contractor carrying out the Work identified in clause 6.1.

7. PRINCIPAL SUPPLIED MATERIALS

7.1 **(Definitions)** In this clause, '**Principal Supplied Materials**' means materials identified in Appendix B which the Principal is required under the Contract to supply, or which the Principal otherwise agrees in writing to supply, to the Contractor free of charge for use in WUC.

7.2 **(Principal's obligation to provide)** The Principal must:

- (a) deliver Principal Supplied Materials to the Site; or
- (b) make the Principal Supplied Materials available at the location (if any) stated in the Contract,

at the time at which the Program required the materials to be provided or made available, or such other time as the Principal agrees in writing.

7.3 **(Inspection by Contractor)** Upon any Principal Supplied Materials being delivered or made available, the Contractor must immediately inspect the materials and ensure that the specified quantity has been delivered and that the materials are in a condition which complies with the requirements of the Contract.

7.4 **(Notice of deficiencies)** If, within 5 Business Days of the materials being delivered or made available, the Contractor does not notify the Superintendent in writing of any deficiencies, then it shall be deemed that the specified quantity of Principal Supplied Materials has been delivered or made available to the Contractor in a condition that complies with the Contract.

7.5 **(Risk)** Any Principal Supplied Materials which, after it is delivered or made available to the Contractor, is lost, destroyed, contaminated, or altered in any way such that the materials no longer comply with the Contract, shall be immediately removed, disposed of, and replaced by the Contractor, at the Contractor's expense, with materials that comply with the Contract, unless the Superintendent expressly directs otherwise. The Contractor must notify the Superintendent in writing of any lost, destroyed, contaminated, or altered materials within 5 Business Days of becoming aware of such events.

7.6 **(Excess)** Unless otherwise directed by the Superintendent, the Contractor must return any excess Principal Supplied Materials to the Principal at the place required by the Superintendent.

7.7 **(Ownership)** Principal Supplied Materials, other than destroyed, contaminated or altered material which is disposed of by the Contractor pursuant to clause 7.5 shall, notwithstanding anything else in this clause 7, remain the property of the Principal at all times.

8. APPROVALS AND OTHER LAW

8.1 **(Approvals obtained by the Principal)** The Principal has obtained the following Approvals:

- (a) Design and maps
- (b) Site approval

The Contractor must comply with those Approvals to the extent that they are applicable to WUC.

8.2 **(Identifying, obtaining and maintaining Approvals)** The Contractor must identify and notify the Principal of all Approvals which are necessary for the proper performance of WUC (other than Approvals which the Principal has advised the Contractor it has already obtained). The Contractor must obtain and maintain all such Approvals until the end of the last Defects Liability Period to expire. The cost of obtaining and maintaining all such Approvals shall be borne by the Contractor.

- 8.3 **(Final certificates)** The Contractor must:
- (a) obtain all final certificates; and
 - (b) provide a list of all inspections and forms required for the final certificate before commencing any WUC.
- 8.4 **(Compliance)** The Contractor must ensure that its Personnel comply with all Approvals and other laws which are in anyway applicable to WUC, including, unless the Contract expressly provides otherwise, by paying all fees, royalties, levies, charges, costs, expenses, taxes, or duties.
- 8.5 **(Obtaining or granting of Approvals by Principal)** The Principal gives no warranty and makes no representation that:
- (a) it will be able to obtain, or obtain within any particular time; or
 - (b) where the Principal is the relevant Authority, that it will grant, any Approvals required for the Contractor to perform WUC.
- 8.6 **(Timing)** The Contractor is deemed to have allowed a reasonable time in the Program for all required Approvals to be applied for and obtained.
- 8.7 **(No fetter)** Nothing in the Contract shall be taken to fetter the power, rights, or authority of the Principal as an Authority under the *Local Government Act 2009* (Qld), the *Local Government Regulation 2012* (Qld), or any other law.

9. SITE

- 9.1 **(Location)** The Site is identified in the scope of works and Technical Specification and Appendices.
- 9.2 **(Requirements of access or possession)** The Contractor's attention is drawn to clause 24 of the General Conditions of Contract. The Contractor must provide the following documentation and information to the Superintendent. The documentation and information must be provided:
- (a) in a form that complies with the requirements of the Contract;
 - (b) as a requirement of the Principal giving access to or possession of the Site; and
 - (c) within the earlier of:
 - (i) 20 Business Days after the Date Of Acceptance Of Tender; and
 - (ii) 5 Business Days prior to any scheduled pre-start meeting.

Item	Description	Relevant clause
(A)	Updated Program	Clause 100 of this General Specification
(B)	Stakeholder Management Plan	Clause 111.1 of this General Specification
(C)	WHS plan and other WHS documentation (including, if applicable, evidence of payment of fees and lodgement of notice appointing Contractor as principal contractor)	Clause 17.5 of the General Conditions of Contract
(D)	Quality management plan	Clause 12.22 of this General Specification

(E)	Inspection and test plan	Clause 12.3 of this General Specification
(F)	Dilapidation survey	Clause 13.7 of this General Specification
(G)	Environmental management plan	Clause 18.22 of this General Specification
(H)	Erosion and sediment control plan	Clause 18.33 of this General Specification
(I)	Biosecurity risk management plan	Clause 20.2 of this General Specification
(J)	Traffic management plan	Clause 233 of this General Specification

- 9.3 **(Site specific induction)** The Contractor must ensure that:
- (a) each of the Contractor's Personnel working on Site receives a site-specific induction;
 - (b) every visitor to the Site either receives a site-specific induction or is accompanied at all times at the Site by someone who has received a site-specific induction for that Site (or, where the Site comprises more than one location, the particular part of the Site).
- 9.4 **(Site specific requirements)** The Contractor must comply with the reasonable requirements of the Principal in relation to the Contractor's access to or conduct on the Site.
- 9.5 **(Locations within Site)** The Contractor must ensure that all plant, equipment, materials, temporary workshops, stores, and offices are kept within the confines of the Site at locations approved by the Superintendent.
- 9.6 **(Unauthorised entry to site)** The Contractor must use all reasonable endeavours to prevent any unauthorised entry to the Site.
- 9.7 **(Security fencing)** The Contractor must supply, install, maintain, repair, and remove security fencing around the Site. The security fencing must:
- (a) clearly identify the extents of the Site to the public;
 - (b) be covered with opaque screening/printed fence wrap to limit viewing into the Site and include any graphic design provided by the Principal; and
 - (c) be kept in good condition.
- 9.8 **(Signage)** No signage is to be placed on the Site or the perimeter (other than safety signage) without the prior written consent of the Superintendent.
- 9.9 **(Deliveries)** The Contractor is responsible for delivery and unloading of all goods, equipment and other materials used in WUC (including any such materials used by subcontractors), providing space for the storage of the materials, handling the materials, and checking that the materials comply with the requirements of the Contract.
- 9.10 **(Site office)** The Contractor is to provide an office at the Site for the exclusive use of the Superintendent and the Superintendent's Representatives. The office is to be suitable for Site meetings and accommodate a minimum of eight (8) people. Appropriate furniture including a desk, table, eight (8) meeting chairs, fridge, air conditioning and all associated services are to be provided by the Contractor.
- 9.11 **(Setting out)** The Contractor's attention is drawn to clause 26 of the General Conditions of Contract. The Contractor must:

- (a) set out The Works from the information shown on the drawings;
- (b) check all dimensions on Site before proceeding with WUC; and
- (c) notify the Superintendent of any omissions or discrepancies within the drawings or General Specification.

Notwithstanding subclause 26.2 of the General Conditions of Contract, any errors in the position, level, dimensions, or alignment of any WUC shall be rectified at the Contractor's expense, unless the Contractor gave the Superintendent written notice of the error before commencing Work in reliance on the erroneous position, level, dimension, or alignment.

- 9.12 **(Interference)** The Contractor must use all reasonable endeavours to minimise interference with existing amenities, whether natural or man-made, and the amount of noise caused by the carrying out of WUC.
- 9.13 **(Services)** Except to the extent that the Contract expressly provides otherwise, the Contractor must, at its expense, connect and otherwise provide all required services, including water, sewerage, drainage, electricity, and communications, and obtain all required Approvals for connection or use of services.
- 9.14 **(Connection to Principal's water infrastructure)** Unless otherwise directed by the Superintendent (which may be given, withheld or given subject to conditions in the absolute discretion of the Superintendent), the Principal shall undertake all connections to the Principal's water infrastructure.
- 9.15 **(Connection of new sewer mains to existing mains)** The Contractor shall undertake all connections to sewer infrastructure to the extent indicated in the specifications and drawings forming part of the Contract. The Contractor shall liaise with the Principal prior to any such Work so arrangements can be made for any required flow control and shutdowns. The Contractor must give the Superintendent written notice of the date of any proposed shut-down at least 20 Business Days prior to the shutdown. The Contractor must give the Superintendent the Contractor's proposed methodology at least 10 Business Days prior to the shutdown. Any costs reasonably and necessarily incurred by the Principal arising out of or in connection with a failure by the Contractor to comply with these timeframes shall be certified by the Superintendent as a debt due and payable by the Contractor to the Principal.
- 9.16 **(Public utilities and other assets)** Without limiting the Contractor's obligations under clause 15 of the General Conditions of Contract, the Contractor must use all reasonable endeavours to identify, locate, and prevent damage to overhead public utility lines, surface drainage works, underground pipes, conduits, and cables in the vicinity of The Works. If the Contractor or any of its Personnel damage any such assets, then:
- (a) the Contractor must immediately report such damage to the owner of the asset and the Superintendent; and
 - (b) comply with the requirements of the owner of the asset (including by paying for any required repairs or renewals).

The Contractor must notify the Superintendent immediately if the Contractor considers that it is necessary to alter the location or level of any existing assets to conform with the requirements of the Contract. If directed to do so by the Superintendent, the Contractor must arrange for the relocation Work to be carried out by the appropriate Authority. Subject to clause 25 of the General Conditions of Contract, the Contractor shall bear the cost of such relocation.

- 9.17 **(No latent condition for material to be excavated)** In addition to any other warranties given or representations made in the Contract, the Contractor warrants and represents that it has inspected the Site and has, carried out all necessary investigations to ascertain the materials which may need to be excavated for WUC and, if required, their suitability to be used in WUC. Notwithstanding clause 25 of the General Conditions of Contract, the Principal shall not be liable upon any Claim in connection with excavation, disposal of materials or replacement of materials irrespective of materials or conditions encountered at the Site.

9.18 **(Other property)** The Contractor must:

- (a) arrange for any other land (in addition to land made available by the Principal) required by the Contractor to carry out WUC, whether for the storage of materials, plant, or equipment, or for any other purposes;
- (b) obtain the Principal's permission in writing to enter any private property (as that term is defined in the *Local Government Act 2009* (Qld) ('Private Property') before entering the Private Property for the purpose of carrying out WUC or fulfilling any other obligation of the Contractor under the Contract;
- (c) comply with all Legislative Requirements, including the *Local Government Act 2009* (Qld) in relation to entering Private Property;
- (d) not unreasonably obstruct, destroy, or damage any Private Property, other land or other property, and ensure that all roadways, drains, watercourses, buildings, fences, gardens, walls, concrete surfaces and paths, grass and trees, and other property are left in a condition equivalent or better than that in which the property was found, unless the Contractor provides written evidence that the owner of the property agrees otherwise;
- (e) take over control of any approval, permit, or license that the Principal has in place, in relation to the Site or other land made available by the Principal, prior to commencing any WUC on the Site or using or occupying the other land.

9.19 **(Private property)** The Contractor must ensure that all Personnel of the Contractor that enter Private Property in connection with WUC:

- (i) have all appropriate qualifications, skills, and training to exercise a power or perform a responsibility under Chapter 5, Part 2, Division 2 of the *Local Government Act 2009* (Qld);
- (ii) do not exercise any power or perform a responsibility under Division 2, Chapter 5 of the *Local Government Act 2009* (Qld) unless the Contractor's Personnel are authorised as local government workers (as that term is defined in the *Local Government Act 2009* (Qld)) ('Local Government Worker') by the Principal; and
- (iii) comply with all obligations of a Local Government Worker imposed under the *Local Government Act 2009* (Qld).

10. PROGRAM

10.1 **(Format and details)** The Program shall:

- (a) be prepared utilising native format Microsoft Project software, or alternative software as approved in writing by the Superintendent;
- (b) be submitted in electronic format with copies in both PDF format and native Microsoft Project file format; and
- (c) detail the Contract milestone dates, the commencement and completion dates of each trade, and/or sub-contract;
- (d) work activity, procurement activities and supply contract activity, with activities linked in a logical progression through a 'critical path' and identify any float based on a continuous cycle of WUC.
- (e) be updated at least fortnightly and submitted to the Principal for discussion at the fortnightly site meetings.

- 10.2 **(Allowances in program)** The Contractor must allow, and is deemed to have allowed, in the program for:
- (a) the time permitted under the General Conditions of Contract for the Superintendent to review documents for which the Contract requires the Contractor to obtain the Superintendent's Direction about such documents; and
 - (b) other timeframes under the Contract within which the Superintendent and the Principal are permitted to act.
- 10.3 **(Approval of Program)** The approval of, or permission to adopt, a Program by the Superintendent will not relieve the Contractor of any of its obligations under the Contract, including the obligation to not, without reasonable cause, depart from an earlier approved Program.
- 10.4 **(Improving progress)** If, in the opinion of the Superintendent, the Contractor falls behind an approved Program, the Contractor must, unless otherwise directed by the Superintendent:
- (a) take such steps as are necessary to improve progress (including the use of additional resources);
 - (b) promptly, and within the time directed by the Superintendent, submit a revised Program, identifying the steps taken or to be taken.

The Principal shall not be liable upon any Claim in connection with the Contractor's compliance with this clause.

11. STAKEHOLDER MANAGEMENT

- 11.1 **(Workshop and plan)** The Contractor shall:
- (a) convene a workshop with the Principal, Superintendent, and the Contractor to identify all stakeholders on the project and to agree protocols for communications between stakeholders and the various parties of the Contract;
 - (b) develop a stakeholder management plan based on the outcome of the workshop and the requirements of this clause; and
 - (c) obtain and comply with the Superintendent's Direction regarding the plan pursuant to subclause 8.3 of the General Conditions of Contract.
- 11.2 **(Notice to Superintendent)** With respect to notification, the *Contractor* shall give the Superintendent a minimum of 15 business days' written notice of changes in traffic movements or any Work impacting individual property owners or businesses. The notice shall be clearly titled 'Notice of Changes in Traffic Movements' or 'Notice of Any Works Impacting Individual Property Owners or Businesses' and contain the following information:
- (a) title of notice;
 - (b) start and finish dates of Work;
 - (c) purpose of communications;
 - (d) type and length of interruption;
 - (e) affected locations (chainages, streets, property accesses, etc);
 - (f) whether the works subject to weather;
 - (g) who is carrying out the works (i.e. contractor or subcontractor); and

- (h) Contractor details.
- 11.3 **(Notice to stakeholders)** The Principal shall be responsible for undertaking public notification distributing through their normal channels. The Contractor shall be responsible for hand delivering written notices prepared by the Principal to individuals impacted and must do so not later than 5 Business Days prior to commencing the Works. The Contractor shall also send a copy of the written notice via registered post 5 Business Days prior to commencing The Works with a covering letter confirming the dates and times the written notice was hand delivered.
- 11.4 **(Sign board)** The Contractor must provide a sign board comprising the following information, at the entrance to the Site or as required:
- (a) Contractor's name;
 - (b) Contractor's postal address; and
 - (c) Site supervisor's name and 24-hour contact number.
- 11.5 **(Complaints)** With respect to complaints, the Contractor shall:
- (a) maintain a record of any complaints received from any stakeholder or the public, including documentary evidence that complaints have been addressed and attended to, to the satisfaction of the Superintendent; and
 - (b) discuss all complaints with the Superintendent promptly after being made aware of it and follow any directions of the Superintendent in relation to the complaint.

12. QUALITY MANAGEMENT SYSTEM

- 12.1 **(General)** The Contractor must:
- (a) prior to commencing WUC at the Site, implement a quality management system which accords with the requirements of ISO 9001 or with any alternative standard approved by the Superintendent (acting reasonably);
 - (b) provide a copy of the ISO9001 certification (or other documentary evidence suitable to the Superintendent, acting reasonably) of the Contractor's system;
 - (c) comply with, and ensure that all of the Contractor's Personnel comply with the system;
 - (d) appoint a suitably qualified quality management representative, who shall have such authority to effectively manage and control the implemented quality system.
- 12.2 **(Quality management plan)** The Contractor's quality management system must include a quality management plan which contains at least the following information:
- (a) a project organisation chart clearly showing the lines of authority, responsibility, and communication that will be in effect;
 - (b) details of the qualifications and experience of all project management and supervision staff;
 - (c) a lot plan;
 - (d) details of project specific procedures, including those related to the following to the extent that they are applicable to WUC:
 - (i) all shop drawing formation and coordination;
 - (ii) management of all services subcontractor/trades;

- (iii) management of all services/operational commissioning;
- (e) applicable inspection and test plans;
- (f) a register of all proposed quality records; and
- (g) a copy of the NATA terms of registration for the Contractor's compliance testing laboratory.

The Contractor must obtain and comply with the Superintendent's Direction regarding the plan pursuant to subclause 8.3 of the General Conditions of Contract.

12.3 **(Inspection and test plan)** The Contractor must, as part of the Contractor's quality management system, prepare and obtain the Superintendent's Direction regarding an inspection and test plan. The inspection and test plan must, at a minimum, detail:

- (a) the items of Work to be inspected or tested;
- (b) the party who will carry out the inspection or test;
- (c) the stages at which Work is to be inspected and tested or the frequency of inspections and tests;
- (d) the testing procedures and methodologies;
- (e) acceptance criteria;
- (f) non-conformance management and corrective processes;
- (g) Work which shall not be covered up or made inaccessible without the prior approval of the Superintendent;
- (h) witness points for Work for which a Superintendent's Representative must be present;
- (i) hold points beyond which Work cannot proceed without approval of the Superintendent;
- (j) relevant standards; and
- (k) the records to be maintained by the Contractor.

The Contractor must obtain and comply with the Superintendent's Direction regarding the plan pursuant to subclause 8.3 of the General Conditions of Contract.

12.4 **(Reporting)** The Contractor must provide the Superintendent with all documents and information:

- (a) reasonably requested to support or evidence the Contractor's quality management system;
- (b) which are produced by the Contractor in compliance with the quality management system.

12.5 **(Inspections)** The Principal and the Superintendent may carry out inspections of the Site at any time. During inspections, the Contractor shall provide the Principal and the Superintendent with all documents, access and assistance reasonably requested by either. The Contractor shall provide a sufficient and safe access for all inspections at the Site. Unless otherwise specified, the Contractor must give the Superintendent no less than 2 Business Days' notice of its intention to commence each stage of the following Work:

- (a) Principal will give you the inspection schedule and list if required;

If the Contractor does not provide the required notification for an inspection, particularly in the event that an urgent after-hours inspection is required to ensure WUC is not delayed, the Superintendent may deduct the cost of the inspection as a Required Deduction pursuant to clause 37.2 of the General Conditions of Contract.

13. REPORTS, MEETINGS AND RECORD KEEPING

13.1 **(Progress reports)** The Contractor must:

- (a) keep the Principal fully informed of the progress and performance of WUC;
- (b) at the times stated in the Contract and when otherwise reasonably required by the Principal, meet and discuss the performance of the Contractor and/or any other matter concerning the Principal in connection with the Contract; and
- (c) comply with any recommendations or directions given by the Principal in relation to the performance of the Contractor's obligations under the Contract (but such compliance will not release or discharge the Contractor from any liability or obligation under the Contract).

13.2 **(Meetings)** The Contractor must, at the times reasonably required by the Principal, meet and discuss the performance of the Contractor and/or any other matter concerning the Principal in connection with the Contract. The Contractor shall provide a sufficient and safe access for all meetings at the Site.

Without limiting the preceding paragraph, the Contractor must attend and ensure that the Personnel noted below attend the following meetings:

Item	Meeting description	Topics for discussion	Time for meetings	Required attendees
(a)	Pre-start meeting	Contract Requirements	Prior to commencement of WUC at the Site	Superintendent, and Principal and Contractor Representatives
(b)	Progress Meetings	Contractual Issues, Progress of Works, updated work schedule, Claims etc.	Fortnightly, unless otherwise agreed	Superintendent, and Principal and Contractor Representatives

13.3 **(Record of compliance)** The Superintendent may direct the Contractor to provide reasonable evidence of its compliance with the requirements of the Contract, within the time reasonably required by the Superintendent. The Superintendent and the Principal shall be entitled to rely on any failure by the Contractor to provide reasonable evidence of compliance, with a particular requirement of the Contract as *prima facie* evidence that the Contractor has not complied with that requirement.

13.4 **(Record of compliance)** The Contractor must:

- (a) create and maintain complete and accurate records, reports and other documents demonstrating the Contractor's compliance with the Contract, including:
 - (i) full fill the councils policy and procedure;
 and any other records, reports or documents reasonably required by the Principal in connection with the Contract; and

- (b) create any document required to be prepared under any management plan prepared under the Contract.

13.5 **(Audit)** The Principal may at any time up to the expiry of the last Defects Liability Period to expire (or where the Contract is earlier terminated, up to 12 months after the date on which the termination takes effect), on the giving of reasonable notice, audit the Contractor's compliance with the Contract or any obligation under it. The Contractor shall facilitate the audit by:

- (a) allowing the auditors to undertake any inspections;
- (b) providing such assistance, information and access to the Site, systems and equipment and other cooperation;
- (c) providing the auditor with copies of, and facilitating the copying by the auditor of, all the other records, information, and documentation required to be created under clause 13,

as reasonably required by the auditor. If the audit reveals any non-compliance by the Contractor with its obligations under the Contract, then the costs reasonably and necessarily incurred by the Principal in conducting the audit shall be a debt due and payable by the Contractor. Otherwise, the Principal shall bear the cost of the audit. For clarity, the Contractor is not required to provide to the Principal under this clause, any documents to the extent that they contain material which is subject to legal professional privilege.

13.6 **(Photographic evidence)** The Contractor must provide to the Superintendent a progressive photographic record of the progress of WUC at the following stages and as otherwise reasonably required by the Superintendent:

Item	Stages at which photographic record to be made
(a)	On the giving of possession of the Site
(b)	Prior to commencing repairs on a particular structure/component of works
(c)	Following preparation of works (ie showing extend of works) prior to undertaking repairs/crack filling/covering up)
(d)	Showing completing of repair works on a particular structure/component of works.
(e)	At the end of each calendar month prior to the month in which Practical Completion is achieved; and
(f)	At Practical Completion.

Photographs shall be in high-definition digital format and shall be dated and labelled to describe the photograph's content.

13.7 **(Dilapidation survey)** The Contractor must, prior to the commencement of WUC, undertake a dilapidation survey including a photographic record clearly indicating the date and time of photos taken, of all areas identified as forming part of the Site and work areas / structures to be repaired.

The dilapidation survey shall be replicated prior to and as a requirement of Practical Completion. The purpose of this survey is to confirm the pre and post-construction condition of the Site. The dilapidation survey shall be completed by the Contractor in the company of the Superintendent.

14. PROJECT TRUSTS AND RETENTION TRUSTS

- 14.1 **(Definitions)** Terms used in this clause 14 which are not separately defined in the Contract have the same meaning as is attributed to them in Chapter 2 of the Security Of Payment Legislation.
- 14.2 **(Compliance)** Nothing in this clause shall be taken to limit the Contractor's obligations under Chapter 2 of the Security Of Payment Legislation. The Contractor must provide all information and documentation that the Superintendent reasonably directs in connection with the Contractor's compliance with this clause.
- 14.3 **(Project trust account)** The Contractor must:
- (a) open and maintain a Project Trust Account; and
 - (b) give to the Superintendent and Principal all notices which the Security Of Payment Legislation requires the Contractor to give in connection with a Project Trust.
- 14.4 **(Retention trust account)** The Contractor must:
- (a) open and maintain a Retention Trust Account; and
 - (b) give to the Superintendent and Principal all notices which the Security Of Payment Legislation requires the Contractor to give in connection with a Retention Trust.
- 14.5 **(Variation to contract)** If at the Date Of Acceptance Of Tender:
- (a) the Contractor is not required to open and maintain a Project Trust Account but subsequently becomes required to do so under the Security Of Payment Legislation; or
 - (b) the Contractor is not required to open and maintain a Retention Trust Account but subsequently becomes required to do so under the Security Of Payment Legislation,
- the Contractor must give the Superintendent and Principal written notice of that changed requirement within 5 Business Days of the date on which the Contractor becomes aware, or ought to have become aware of the changed requirement and must comply with clauses 14.4 and or 14.5 as the case may be.
- 14.6 **(Substantial breach)** In addition to other acts or omissions which constitute a Substantial Breach of the Contract, Substantial Breaches include the Contractor failing to
- (a) establish a project trust account as required by the security of payment legislation, in breach of clause 14.3;
 - (b) establish a retention trust account as required by the security of payment legislation, in breach of clause 14.4;
 - (c) comply with an obligation of the Contractor set out in Part 2, Divisions 4 and 5 of Chapter 2 of the security of payment legislation;
 - (d) comply with an obligation of the Contractor set out in Part 3, Divisions 4 and 5 of Chapter 2 of the security of payment legislation.

15. PRINCIPAL SUPPLIED INFORMATION

- 15.1 **(Definitions)** In this clause, **Principal Supplied Information** means:
- (a) the following information or documents:

- (i) defect map/s & register, concept design information, existing asset drawings – as contained in Appendices A-D of the Technical Specification;
- (ii) policy and procedures and
- (b) any other information relating to the Contract which either:
 - (i) does not form part of the Contract but which is or has been provided or made available by or on behalf of the Principal to the Contractor; or
 - (ii) does form part of the Contract, but which is expressly identified as Principal Supplied Information or otherwise as information on which the Contractor should not or must not rely,

and includes information in any form and information which is made available before or after the Date Of Acceptance Of Tender.

15.2 **(No warranty or representation by Principal)** The Principal gives no warranty and makes no representation that the Principal Supplied Information is accurate, adequate, or complete.

15.3 **(No reliance)** The Contractor:

- (a) Acknowledges and agrees that the Contractor has not relied on the Principal Supplied Information in entering into the Contract; and
- (b) must not rely on the Principal Supplied Information unless and until the Contractor has independently verified the adequacy, accuracy, and completeness of that information.

16. CONFIDENTIAL INFORMATION

16.1 **(Specific confidential information)** Without limiting subclause 8.5 of the General Conditions of Contract, the Contractor must, and must ensure that its Personnel, keep confidential the following documents and any other information obtained in the course of performing the Contract which is, of its nature, confidential:

- (a) the Contract;
- (b) policy and procedure;
- (c) maps and design.

17. SAFETY

17.1 **(Relationship to General Conditions of Contract)** The Contractor's attention is drawn to clause 12A of the General Conditions of Contract. Nothing in clause 17 shall be taken to limit or exclude any obligation or liability of the Contractor under the General Conditions of Contract or at law in relation to work, health and safety.

17.2 **(Safety in design assessment)** A project specific safety in design risk assessment ('SiD Assessment') has been included as part of the request for tender documentation for the Contract. The SiD Assessment:

- (a) contains information which the Principal and the Principal's design consultant have in relation to the hazards and risks at or in the vicinity of the Site and who is best placed to mitigate those potential risks; and
- (b) has been prepared by a third party, and the Principal gives no warranty and makes no representation as to the accuracy, adequacy, or completeness of the SiD Assessment.

The Contractor must review the SiD Assessment, seek clarification on any areas of concern and take account of the SiD Assessment when discharging its duties and obligations under the *Work Health and Safety Act 2011* (Qld) and the *Work Health and Safety Regulation 2011* (Qld).

17.3 **(Storage)** The Contractor must:

- (a) appropriately store and secure any poisonous, flammable, or injurious substances for the duration of WUC;
- (b) provide all necessary fully charged fire extinguishers in accessible locations at the Site as are necessary for the care and safety of WUC to the satisfaction of the Superintendent and the Queensland Fire and Emergency Services, or other relevant Authority;
- (c) provide adequate first aid facilities appropriate to the size and composition of his/her staff and labour force and the nature of WUC;
- (d) if the Principal has appointed a third party as principal contractor for the Site under the *Work Health and Safety Regulation 2011* (Qld), comply with the reasonable requirements of that third party in its capacity as principal contractor; and
- (e) if the Principal has not appointed a third party as principal contractor for the Site:
 - (i) comply with the Principal's Policies and Procedures relating to work, health and safety;
 - (ii) inform the Principal of all its work health safety policies, procedures or measures implemented for the individual project sites established for performance of its obligations under this Contract.

17.4 **(Microbiological risks)** The Contractor is advised that partially treated and untreated sewage and aerosols/spray contains micro-organisms such as bacteria, viruses, and parasites that can exist in large numbers. These micro-organisms may be harmful to health. The Contractor shall ensure that all microbiological risks are considered, and appropriate control measures identified within the Contractor's work health and safety management plan, general risk assessment for WUC, and any specific task related work method statements.

17.5 **(Safety audit)** The Contractor must:

- (a) prior to commencing WUC engage an independent third party to carry out safety audits of the Contractor's work practices. The safety audit must, as a minimum, include the following:
 - (i) verification that the Contractor is carrying out WUC in accordance with the approved WHS plan submitted to the Principal under subclause 12A.4(d) of the General Conditions of Contract;
 - (ii) physical safety inspection of the Site and the Contractor's work practices; and
 - (iii) confirmation that Contractor and the Contractor's Personnel is compliant with all Legislative Requirements;
- (b) provide the Principal with the safety auditor's report together with the Contractor's WHS plan within 5 Business Days after completion of the safety audit;
- (c) within 5 Business Days of the date of the safety auditor's report, create a non-conformance plan to rectify non-conformances identified in the safety auditor's report (if any) and keep evidence satisfactory to the Principal of the completion of the plan.
- (d) provide a copy of the non-conformance plan to the Principal within 5 Business Days of the date of the safety audit report. The Principal may audit the implementation of the

non-conformance plan to rectify any non-conformances, and request evidence satisfactory to the Principal of completion.

- (e) immediately suspend WUC (or the relevant portion of WUC) until the Contractor has addressed the safety issues identified during the safety audit and/or in the safety audit report. The Contractor must continue to comply with all duties and obligations under the WHS Act and the Contract;
- (f) rectify any non-conformances in the Contractor's WHS Plan and resubmit the revised WHS Plan to the Principal within 5 Business Days.

17.6 **(Electrical Safety)** The Contractor must:

- (a) comply with all provisions of the *Electrical Safety Act 2002* (Qld) and all related Legislative Requirements; and
- (b) ensure that:
 - (i) all electrical work conducted, including work performed by subcontractors, is fully documented and recorded on a 'Certificate of Electrical Safety';
 - (ii) all required 'AS3000 Test Results' are documented and recorded by the Contractor; and
- (c) provide:
 - (i) certificates of testing and safety pursuant to the *Electrical Safety Regulation 2013* (Qld) for all electrical work carried out as part of WUC (whether by the Contractor or by subcontractors); and
 - (ii) records of all test results in accordance with AS3000:2007 for all electrical installation works on property owned by the Principal.

18. ENVIRONMENTAL PROTECTION

18.1 **(Environmental protection)** The Contractor must, and must ensure that its Personnel, perform the Contractor's obligations in accordance with:

- (a) best practice environmental management (as that term is defined in Section 21 of the *Environmental Protection Act 1994* (Qld));
- (b) the requirements of all other Legislative Requirements relating to the protection of the Environment; and
- (c) the Principal's policies and procedures relating to the protection of the Environment.

18.2 **(Environmental Management Plan)** The Contractor must, within the time required by clause 9.2, prepare and provide to the Superintendent for review an environmental management plan ('EMP') for WUC, detailing how the Contractor will prevent or minimise the risk of harm to the environment in performing its obligations under the Contract. The Contractor must obtain and comply with the Superintendent's Direction regarding the plan pursuant to subclause 8.3 of the General Conditions of Contract. The Contractor must comply, and ensure that all of the Contractor's Personnel comply, with the EMP at all times until the expiration of the last Defects liability Period to expire. The EMP must:

- (a) comply with ISO14001;
- (b) cover all WUC to be undertaken at the Site;
- (c) describe the Contractor's process and procedures for the management of the risk of harm to the environment in connection with WUC;

- (d) be consistent with relevant Australian Standards and Legislative Requirements;
- (e) be a practical and achievable plan;
- (f) detail each environmental issue and impact which is to be addressed;
- (g) include all control measures which the Contractor shall undertake and any issues which the Contractor shall address during the construction process (including any required pre or post construction activity);
- (h) detail who is responsible for ensuring the control measures are undertaken, the verification of such actions, and the reporting process;
- (i) provide a trigger for undertaking an action, and where possible, timing of each action;
- (j) detail procedures for the monitoring of the EMP by the Contractor;
- (k) detail a procedure for recording any non-compliance with the EMP; and
- (l) detail a system for registration and action of environmental complaints.

If the Contractor wishes to commence any WUC prior to obtaining the Superintendent's Direction in relation to the complete EMP, sections of the EMP relevant to that WUC may be submitted at least 10 Business Days prior to the planned commencement of that WUC. A hold point shall occur and no WUC shall proceed until written acceptance of the complete EMP or a section of the EMP relevant to a particular construction operation is received from the Superintendent.

18.3 **(Erosion and sediment control plan)** The Contractor must prepare and obtain the Superintendent's Direction regarding an erosion and sedimentation control plan ('ESCP') pursuant to subclause 8.3 of the General Conditions of Contract. The ESCP must describe the Contractor's process and procedures for the prevention or minimisation of harm caused by erosion and sediment in connection with WUC, including by control of overland flows, minimisation of flow path lengths, and the use of trapping devices to capture sediment. The Contractor must undertake the installation, inspection, repair, and maintenance of all environmental control measures required by the ESCP. The Contractor must inspect all environmental control measures at least:

- (a) once each week;
- (b) immediately after any major rainfall event; and
- (c) as otherwise directed by the Superintendent.

18.4 **(Protection of Fauna)** The Contractor must:

- (a) use all reasonable endeavours to minimise disruption to any fauna at or in the vicinity of the Site;
- (b) ensure that each of the Contractor's Personnel and every other person carrying out WUC at the Site:
 - (i) is appropriately trained in relation to the protection of fauna prior to carrying out any part of WUC;
 - (ii) aware of the potential for impacts on fauna and the need to minimise these impacts,
 prior to that person carrying out any WUC; and

- (c) use all reasonable endeavours to ensure that each of the Contractor's Personnel and every other person carrying out WUC at the Site minimises disruption to any fauna in the vicinity of the Site; and
- (d) at the Contractor's expense, comply with any Directions issued by the Superintendent to address any excessive or avoidable adverse impact on fauna at or in the vicinity of the Site.

18.5 **(Protection of Flora)** The Contractor must:

- (a) use all reasonable endeavours to minimise disruption to any flora at or in the vicinity of the Site;
- (b) ensure that each of the Contractor's Personnel and every other person carrying out WUC at the Site is appropriately trained in relation to the protection of flora prior to that person carrying out any part of WUC;
- (c) use all reasonable endeavours to ensure that that each of the Contractor's Personnel and every other person carrying out WUC at the Site minimises disruption to existing flora at or in the vicinity of the Site;
- (d) make good any damage to flora caused by the Contractor or its Personnel, other than damage which is the unavoidable consequence of carrying out WUC; and
- (e) at the Contractor's expense, comply with any Directions issued by the Superintendent to address any excessive or avoidable adverse impact on flora at or in the vicinity of the Site.

19. WASTE MANAGEMENT

19.1 **(Definitions)** In this clause 'Levyable Waste Disposal Site', "Levyable Waste", "Waste", "Waste Disposal Site" and "Waste Levy" have the meanings given to those terms in the *Waste Reduction and Recycling Act 2011* (Qld).

19.2 **(Contractor's obligation)** The Contractor must:

- (a) ensure that all Waste from the Site is placed in appropriate containers and removed from the Site to a legal Waste Disposal Site in accordance with the *Waste Reduction and Recycling Act 2011* (Qld) and any other applicable Legislative Requirements;
- (b) otherwise, ensure that all Waste arising from WUC is disposed of in accordance with the requirements of the *Waste Reduction and Recycling Act 2011* (Qld) and any other applicable Legislative Requirements relating to the disposal of Waste; and
- (c) pay all royalties, levies, fees, charges, costs, expenses, taxes, or duties in connection with the disposal of Waste.

19.3 **(Evidence of payment)** With or in each progress claim submitted by the Contractor under the Contract, the Contractor must provide a separate breakdown of the amount of any Waste Levy which the Contractor is aware has been passed on to, and paid by, the Contractor in connection with the disposal of Levyable Waste arising from WUC.

19.4 **(Energy Use)** The Contractor shall ensure that the use of energy for WUC is minimised by undertaking regular maintenance of all machinery to ensure energy efficiency and by utilising minimum sized machinery to undertake tasks.

20. BIOSECURITY MANAGEMENT

20.1 **(Definitions)** In this clause:

- (a) a **Biosecurity Risk** is the risk that exists when dealing with:

- (i) any pest, disease, or contaminant (including plants, seeds, spores, eggs, vertebrate, and invertebrate pest); or
 - (ii) something that could carry a pest, disease or contaminant (e.g., animals, plants, soil, equipment and water—known as ‘carriers’).
- (b) a **Potential Biosecurity Risk** is a Biosecurity Risk that does not currently occur at the Site, but which has the capacity to occur at the Site. It may be present but not visible or may be introduced during WUC. It includes risks associated with carriers and the movement and sourcing of materials, vehicles, and machinery; and the disturbance, import, or export of soils;
- (c) a **Known Biosecurity Risk** is a Biosecurity Risk that is currently recorded within the footprint or proximity of the Site which is:
- (i) identified within biosecurity plans or programs active for the area;
 - (ii) identified during WUC; or
 - (iii) otherwise identified by the Principal;
- (d) **BRMP** means a Biosecurity Risk management plan;
- (e) **General Biosecurity Obligation** has the meaning given to that term in the *Biosecurity Act 2014* (Qld).

20.2 **(Biosecurity Risk management plan)** The Contractor must prepare and obtain the Superintendent’s Direction regarding a BRMP pursuant to subclause 8.3 of the General Conditions of Contract. The BRMP must:

- (a) describe the processes and procedures for the management of Biosecurity Risks in connection with WUC;
- (b) outline reasonable and practical steps to address Biosecurity Risks;
- (c) describe how the Contractor will meet its General Biosecurity Obligation;
- (d) address both Potential Biosecurity Risks and Known Biosecurity Risks.

The Contractor must comply with and ensure that all of the Contractor’s Personnel comply with the BRMP.

20.3 **(Training)** The Contractor must ensure that each of the Contractor’s Personnel and every other person carrying out WUC at the Site is appropriately trained to be aware of Biosecurity Risks prior to that person carrying out any part of WUC. If at any time during WUC a breach of the BRMP or a significant Biosecurity Risk is identified, then the Contractor must immediately contact the Superintendent for Direction.

21. ASBESTOS

21.1 **(General)** The removal, transportation, and disposal of asbestos products must be undertaken in accordance with:

- (a) all Legislative Requirements;
- (b) relevant standards and codes of practice including “How to Safely Remove Asbestos 2021” as amended or replaced from time to time; and
- (c) to the extent not inconsistent with paragraphs (a) and (b), any management plan prepared under the Contract.

- 21.2 **(Work to be done by certified removalist)** Such Work must be undertaken by a certified asbestos removalist.
- 21.3 **(Monitoring)** The Contractor must arrange for daily air monitoring and reporting during the asbestos removal process by an independent air monitoring consultant/hygienist.
- 21.4 **(Certification)** At the completion of the asbestos removal process, the Contractor must provide certification that all asbestos has been safely removed from the Site and disposed of in accordance with this clause.

22. CULTURAL HERITAGE

- 22.1 **(Compliance)** Without limiting any other obligation of the Contractor under the Contract or any law, the Contractor's attention is drawn to, and the Contractor must comply, and must use all reasonable endeavours to ensure that its Personnel comply with the requirements of, the *Aboriginal Cultural Heritage Act 2003* (Qld), *Torres Strait Islander Cultural Heritage Act 2003* (Qld) and the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cth).

23. TRAFFIC MANAGEMENT

- 23.1 **(Traffic management plan)** The Contractor must comply with the Principal's traffic management plan for WUC.

- 23.2 **(General)** The Contractor:

- (a) is responsible for the safety of all pedestrians and vehicular traffic at, or adjacent to the Site, or in any way affected by the execution of WUC;
- (b) must provide all necessary lights, barriers, notices and signs, and other traffic control devices required for the safe and appropriate management of traffic.
- (c) must comply with and ensure that all traffic control devices conform to:
 - (i) the current Manual of Uniform Traffic Control Devices published by the Department of Transport and Main Roads;
 - (ii) Queensland Guide to Temporary Traffic Management;
 - (iii) AS1742 Manual of Uniform Traffic Control Devices;
 - (iv) Austroads Australian Guide to Temporary Traffic Management;
 - (v) Queensland Guide to Road Safety;
 - (vi) Guideline – Traffic Management at Works on Roads,

as amended or replaced from time to time. In the event of any inconsistency, ambiguity, discrepancy, or conflict between any requirement or standard in the documents listed above, the Contractor shall comply with the more onerous requirement or higher standard unless otherwise directed by the Superintendent.

- 23.3 **(No obstruction)** The Contractor must:

- (a) provide for the continuous operation of normal traffic along all roads, and pedestrian and vehicular access to properties included in the Contract or intersected by WUC;
- (b) where necessary, provide side-tracks which must be appropriately constructed, signposted, lit, and maintained; and

- (c) use all reasonable endeavours to avoid obstructing any side road, branch track, drain, or watercourse and to the extent that such obstructions cannot be avoided, remove such obstructions as soon as possible.

24. PERSONAL PROPERTY SECURITIES

- 24.1 **(Interpretation)** In this clause, 'PPS Act' means the *Personal Property Securities Act 2009* (Cth). Terms used in this clause which are defined in the PPS Act which are not separately defined in the Contract have the meaning attributed to them in the PPS Act.
- 24.2 **(Disclosure)** If this Contract contains a security interest, then each party agrees to the purposes of section 275(6) of the PPS Act that it will not disclose information of the type referred to in section 275(1) of the PPS Act, where a request is made under section 275(1) of the PPS Act in relation to this Contract or any part of it, except in circumstances where the party is compelled by law (other than section 275(1) of the PPS Act) to make that disclosure.
- 24.3 **(Contractor's obligations)** If the Principal determines that any clause of this Contract, or a transaction contemplated by this Contract or in connection with the performance of WUC, constitutes, or is likely to give rise to a security interest in respect of which the Principal is the security holder, then the Contractor:
- (a) must, within the time required by the Principal, provide all assistance and cooperation requested by the Principal that the Principal determines is reasonably required to;
 - (i) register and maintain the registration of its security interest on the personal property securities register within any applicable time limits relevant to the effectiveness of the security interest;
 - (ii) ensure that the Principal's security interest is enforceable against third parties, perfected, or otherwise effective;
 - (iii) ensure that the security interest has the appropriate priority required by the Principal (including where applicable, as a purchase money security interest);
 - (iv) ensure that any security interest granted temporary perfection under the PPS Act is perfected by registration or other appropriate means prior to any applicable expiry of that temporary perfection;
 - (v) enable the Principal to register financing statements or financing change statements under the PPS Act, with respect to any such security interest;
 - (b) waives the right to receive notice of a verification statement in relation to the registration of that security interest;
 - (c) must not register or permit to be registered any other security interest in respect of the personal property that comprises the collateral in respect of that security interest, other than one that has been consented to or granted by the Principal;
 - (d) must not cause or allow any of the Contractor's personal property to become an accession to the Principal's personal property or cause or allow the Principal's personal property to become an accession to the Contractor's personal property without the prior consent of the Principal; and
 - (e) must immediately notify the Principal if any other person claims or attempts to enforce a security interest:
 - (i) in the Principal's personal property; or
 - (ii) in the Contractor's personal property to the extent that that purported enforcement affects or has the potential to affect the Contractor's ability to carry out WUC in accordance with the terms of the Contract.

25. HEAVY VEHICLE NATIONAL LAW

- 25.1 **(Meaning of terms)** Terms used in this clause which are defined in the Heavy Vehicle National Law (Queensland) (the 'National Law') have the same meaning as in that law.
- 25.2 **(General obligations)** The Contractor must ensure, so far as is reasonably practicable, the safety of the Contractor's transport activities. Without limiting this, the Contractor must, so far as is reasonably practicable:
- (a) eliminate public risks and, to the extent it is not reasonably practicable to eliminate public risks, minimise the public risks; and
 - (b) ensure the party's conduct does not directly or indirectly cause or encourage:
 - (i) the driver of the heavy vehicle to contravene the National Law; or
 - (ii) the driver of the heavy vehicle to exceed a speed limit applying to the driver; or
 - (iii) another person, including another party in the chain of responsibility, to contravene the National Law.
- 25.3 **(Notice)** The Contractor must immediately:
- (a) notify the Superintendent if the Contractor considers that anything in this Contract, or any act or omission of the Principal or its respective officers, employees, agents or representatives, has or is likely to, directly or indirectly, cause or encourage the Contractor or any Personnel of the Contractor:
 - (i) being the driver of a heavy vehicle to contravene the National Law; or
 - (ii) being the driver of a heavy vehicle to exceed a speed limit applying to the driver; or
 - (iii) being another person, including another party in the chain of responsibility, to contravene the National Law; and
 - (b) notify the Principal and the Superintendent in writing in the event that it, or any Personnel, is issued with any warning, request for information or production of documents, notice or fine in respect of any breach of chain of responsibility law in respect of WUC. The Contractor undertakes to provide the Principal and the Superintendent with a copy of any such warning, request, notice or fine, and any response or submissions made by it in relation to the same.
- 25.4 **(Chain of Responsibility)** In addition to its obligations under the chain of responsibility law, the Contractor must comply with the following chain of responsibility compliance assurance conditions, that:
- (a) the Principal has a policy of compliance for its chain of responsibility obligations under the National Law. The Contractor agrees that it complies with its obligations under the chain of responsibility laws, and has a policy of training and compliance that is subject to periodic review and assessment. The Contractor will require its subcontractors and agents to comply with chain of responsibility obligations in any supply chain arrangement or any arrangement whatsoever in connection with WUC;
 - (b) the Principal is committed to taking all reasonable steps to ensure that any carriage of goods by road performed as part of WUC is performed safely and in accordance with the National Law and the chain of responsibility provisions it contains. The Principal will not comply with any instruction or requirement of the Contractor that might have the effect of contributing to a breach of the National Law, or preventing the Principal from taking all steps that it considers necessary to prevent any breach of the National Law;

- (c) upon becoming aware of any breach of mass, dimension, load restraint, fatigue, speed, or maintenance requirement, the Principal may report the breach to the relevant Authority and retain records of the breach; and
- (d) as a requirement of access to the Site, the Contractor must provide copies of any/all:
 - (i) chain of responsibility policy;
 - (ii) mass, dimension, or load restraint policy;
 - (iii) speed management policy;
 - (iv) fatigue management policy; and
 - (v) maintenance management policy,
 that is in place in respect of its business.

26. LABOUR HIRE

The Contractor must not provide or utilise any labour for any WUC, unless the provider of that labour hire is registered under the *Labour Hire Licensing Act 2017* (Qld).

27. NON-CONFORMING BUILDING PRODUCTS

- 27.1 **(Definitions)** In this clause, the terms '**person in the chain of responsibility**', '**building product**', '**Minister**', '**non-conforming building product**' and '**required information**' each have the respective meanings given to those terms in the *Queensland Building and Construction Commission Act 1991* (Qld) ('*QBCC Act*').
- 27.2 **(General)** The Contractor:
- (a) acknowledges that, to the extent that the Contractor is a person in the chain of responsibility, it has obligations under Part 6AA of the QBCC Act in relation to non-conforming building products;
 - (b) warrants and represents that no building products incorporated into The Works are non-conforming building products, or the subject of a warning statement issued by the Minister;
 - (c) must ensure that it, and its subcontractors, suppliers, and consultants provide all required information for a building product incorporated into The Works to the Principal upon installation of the building product into The Works; and
 - (d) must provide all required information and any other information relevant to a building product to the Principal within the timeframes requested by the Principal.
- 27.3 **(Failure to comply)** If the Contractor installs, or incorporates into The Works, a building product without the required information, the Principal will be entitled to do either of the following in its sole and absolute discretion:
- (a) request the required information from the Contractor, in which case the Contractor will provide the required information as soon as reasonably practicable, or
 - (b) direct the Contractor to remove the building product from The Works and replace with a building product that is not non-conforming pursuant to subclause 29.3 of the General Conditions of Contract or clause 35 of the General Conditions of Contract.
- 27.4 **(Requirement of Practical Completion)** The Contractor shall, as a requirement of practical completion, provide to the Principal a signed statutory declaration confirming that all required

information has been obtained and provided to the Principal, and that no non-conforming building products have been installed or incorporated into The Works.

- 27.5 **(Indemnity)** Without limiting clause 11A.6 of the General Conditions of Contract, the Contractor shall indemnify and keep indemnified the Principal against any Claim which may be brought against the Principal, and any cost, expense, fine, penalty, damages or loss which may be imposed upon, suffered, or incurred by the Principal to the extent caused or contributed to any breach of the Contractor's obligations under this clause 27, or by any failure of the Contractor to comply with its obligations under the QBCC Act in relation to building products.

28. WORK HEALTH AND SAFETY ACCREDITATION SCHEME

- 28.1 **(Accreditation)** The Contractor must maintain accreditation under the Australian Government Work Health and Safety Accreditation Scheme ('the Scheme'), established by the *Building and Construction Industry (Improving Productivity) Act 2016* (Cth), while building work (as defined in section 6 of the Act) is carried out.
- 28.2 **(Compliance)** The Contractor must comply with all conditions of the Scheme accreditation and the National Construction Code performance requirements in relation to building materials.

29. QUEENSLAND CODE

- 29.1 **(The Queensland Code)** If applicable, in addition to the terms defined in this document, terms used in this clause 29 have the same meaning as is attributed to them in the Queensland Government's *Queensland Code of Practice for the Building and Construction Industry* (the 'Queensland Code').
- 29.2 **(Primary Obligations)** The Contractor must:
- (a) comply with, and meet any obligations imposed by, the Queensland Code;
 - (b) notify the Australian Building and Construction Commission ('ABCC') (or nominee) and the Principal, of any alleged breaches of the Queensland Code and of voluntary remedial action taken within 24 hours of becoming aware of the alleged breach;
 - (c) where the Contractor is authorised to engage a subcontractor and it does so, ensure that any secondary contract imposes on the subcontractor equivalent obligations to those in this clause 29, including that the subcontractor shall comply with, and meet any obligations imposed by, the Queensland Code; and
 - (d) not appoint or engage another party in relation to WUC, where that appointment or engagement would breach a sanction imposed on the other party in relation to the Queensland Code.
- 29.3 **(Information)** The Contractor must maintain adequate records of compliance with the Queensland Code by it, its subcontractors, and related entities.
- 29.4 **(Access)** The Contractor must allow, and take reasonable steps to facilitate, Queensland Government authorised personnel (including personnel of the ABCC) to:
- (a) enter and have access to sites and premises controlled by the Contractor, including any Site at which WUC is being carried out;
 - (b) inspect any work, material, machinery, appliance, article, or facility;
 - (c) access information and documents;
 - (d) inspect and copy any records relevant to WUC;
 - (e) have access to personnel; and

(f) interview any person,

as is necessary for the authorised personnel to monitor and investigate compliance with the Queensland Code by the Contractor, its subcontractors, and related entities.

29.5 **(Production of documents)** The Contractor, and its related entities, shall agree to, and comply with, a request from Queensland Government authorised personnel (including personnel of the ABCC) for the production of specified documents by a certain date, whether in person, by post, or electronic means.

29.6 **(Sanctions)** The Contractor warrants that at the time of entering into this Contract, neither it, nor any of its related entities, are subject to a sanction in connection with the Queensland Code that would have precluded it from tendering for work to which the Queensland Code applies. If the Contractor does not comply with, or fails to meet any obligation imposed by the Queensland Code, a sanction may be imposed against it in connection with the *Queensland Code*. Where a sanction is imposed:

(a) it is without prejudice to any rights that would otherwise accrue to the parties;

(b) the State of Queensland (through its agencies, Ministers and the ABCC) is entitled to:

(i) record and disclose details of non-compliance with the Queensland Code and the sanction; and

(ii) take them into account in the evaluation of future expressions of interest or tender responses that may be lodged by the Contractor, or its related entities, in respect of work to which the Queensland Code applies.

29.7 **(Cost)** The cost of ensuring the Contractor's compliance with the Queensland Code shall be borne by the Contractor. The Contractor is not entitled to make a claim for reimbursement or an extension of time from the Principal or the State of Queensland for such costs.

29.8 **(No relief)** Compliance with the Queensland Code does not relieve the Contractor from responsibility to perform WUC and any other obligation under the Contract, or from liability for any defect in The Works, or from any other legal liability, whether or not arising from its compliance with the Queensland Code.

29.9 **(Change)** Where a change in the Contract or WUC is proposed, and that change would, or would be likely to, affect compliance with the Queensland Code, the Contractor must immediately notify the Principal (or nominee) of the change, or likely change and specify:

(a) the circumstances of the proposed change;

(b) the extent to which compliance with the Queensland Code will, or is likely to be, affected by the change; and

(c) what steps the Contractor proposes to take to mitigate any adverse impact of the change,

and the Principal will direct the Contractor as to the course it must adopt within 5 Business Days of receiving notice.

30. QUEENSLAND GOVERNMENT QUEENSLAND CHARTER FOR LOCAL CONTENT

30.1 **(Definitions)** Terms used in this clause 30 which are not separately defined in this Contract have the same meaning as is attributed to them in the Charter for Local Content.

30.2 **(Contractor's obligation)** The Contractor must, and must ensure its subcontractors, in carrying out WUC:

- (a) comply with the principles of the Charter for Local Content and any related requirements under the Contract;
- (b) comply with any Statement of Intent or equivalent local content statement under the Contract;
- (c) complete and submit a Charter for Local Content – Project Outcome Report (available from State Government website) to the Principal at, and as a requirement of, Practical Completion and at such other times as reasonably requested by the Principal, with a copy to gclc@dsg.qld.gov.au.

31. AS CONSTRUCTED DRAWINGS

- 31.1 **(Requirements for as constructed drawings)** Unless the Superintendent otherwise directs, as constructed drawings must:
- (a) comply with AS 1100.101-1992: Technical Drawing – General as amended or replaced from time to time;
 - (b) clearly detail the finished line, level, arrangements, layouts, and the like of The Works as completed, including the pickup of any existing in-ground services encountered in the execution of WUC;
 - (c) be prepared utilising the latest issued version of the construction drawings and must be prepared using AutoCAD format, or an alternative software package/format approved by the Superintendent; and
 - (d) must be clearly identified as ‘as constructed drawings’, be appropriately titled, and must be dated and signed by the Contractor.
- 31.2 **(Draft as constructed drawings)** No later than two weeks before the Date For Practical Completion the Contractor must give to the Superintendent, two advanced ‘draft’ copies of the as constructed drawings of The Works.
- 31.3 **(Final as constructed drawings)** The Contractor must give to the Superintendent, as a requirement of Practical Completion, as constructed drawings of The Works as follows:
- (a) 3 complete copies of as constructed drawings in A3 hardcopy format;
 - (b) 1 complete electronic copy of as constructed drawings in PDF; and
 - (c) 1 complete copy in the electronic format in which the drawings were created (native format).

32. OPERATION AND MAINTENANCE MANUALS

- 32.1 **(Requirements for operation and maintenance manuals)** Unless the Superintendent otherwise directs, the operation and maintenance manuals must include:
- (a) Contractor’s name, address, facsimile number, telephone number and email address;
 - (b) maintenance schedule (in tabular form);
 - (c) technical description of the equipment supplied, with diagrams and illustrations where appropriate;
 - (d) detailed description of each item of maintenance;
 - (e) detailed description of each item of operation;
 - (f) procedures for dismantling and reassembling;

- (g) details and descriptions of maintenance and operations, equipment and tools, with instructions for their use;
- (h) supplier/material quality certificates for each product;
- (i) supplier/material specification and data sheets for each product;
- (j) Material Safety Data Sheets (MSDS) for all products directly or indirectly involved in all aspects of operation and maintenance of the works; and
- (k) complete spares list.

32.2 **(Draft as operation and maintenance manuals)** No later than two weeks before the Date For Practical Completion the Contractor must give to the Superintendent, two advanced 'draft' copies of the operation and maintenance manuals for The Works.

32.3 **(Final operation and maintenance manuals)** The Contractor must give to the Superintendent, as a requirement of Practical Completion, 1 complete electronic copy in PDF of the operation and maintenance manuals for The Works.

33. PRACTICAL COMPLETION

33.1 **(Requirements of achieving practical completion)** The Contractor acknowledges that the Contract may elsewhere include additional obligations which must be satisfied as a requirement of Practical Completion. In addition to any such obligations, the Contract must, as a requirement of Practical Completion:

- (a) satisfy all requirements of the Contract in relation to commissioning and operator training;
- (b) provide to the Superintendent one (1) bound and one (1) PDF copy of an end-of-job report which shall contain the following as a minimum:
 - (i) material test results;
 - (ii) details of products used at particular locations including supplier information;
 - (iii) warranty details and certificates (including transfer to Principals name if appropriate)
 - (iv) as constructed drawings which comply with clause 31;
 - (v) completed warranties for all fittings and fixtures including major supply information;
 - (vi) operations & maintenance manuals;
 - (vii) building surveyor inspection certificates where applicable;
 - (viii) plumbing inspection certificates;
 - (ix) electrical inspection certificates; and
 - (x) final inspection certificates from an approved registered certifier;
 - (xi) RPEQ Certification